# Necedah National Wildlife Refuge Necedah, Wisconsin

#### PERSONNEL

David J. Brown Refuge Manager
Vacant* Ass't. Refuge Manager
Theodore A. Johnson** Forester
Vern E. Rudolph Clerk
Robert W. Arrowsmith Mechanic, Heavy Duty
Harold R. Carter Maintenanceman

#### TEMPORARY

Paul E.	Woggon,	WAE -		-	-	-	-	-	-	-	-	Tractor Operator
Edward	K. Swans	on, WA	E -	-	_	_	_	_	_	00M		Laborer

\*Fred Samson to Patuxent on 9/21

\*\* Al Johnson trans. from Tamarac 5/5

Jim Lennartson trans. from Necedah to Piedmont NWR 5/4

David I. Hoff, Ass't. Refuge Manager trans. to Necedah from Shiawassee 11/18, resign 12/9 to return to school.

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#### I. GENERAL

#### A. Weather Conditions

		Precipitat	ion	Max.	Min.
	Month	Normal	Snowfall	Temp.	Temp.
January	2.44	1.02	14.75	_39_	- 24
February	13	1.01	1.25	40	<u>- 16</u>
March	1.47	1.91	13.50	_53_	<u>- 10</u>
April	2.66	2.65		71	23
May	3.43	4.38		87	28
June	5.85	4.98		80	_34
July	2.60	3.77		89	46
August	2.61	3.33		91	39
September	1.64	3.35		82	_29
October	4.44	2.27	encontractive distributions.	86	10
November	57	2.24	1.00	_66_	6
December	1.76	1.36	21.00	113	<u>- 15</u>
Annual Totals	29.60	32.26	51.50Extre	nes <u>91</u>	-24

Cloudy, cold, and wet best describes January weather conditions. Snow fell on 11 days and zero or below temperatures occurred on 18 days during the month. February was unusually sunny and dry. Precipitation was only recorded on 2 days and was the lightest amount recorded in the last five years for this month. March weather continued sunny and dry until the 19th when the first thunderstorm of the year passed through this area. Flowages were still ice-covered at the end of the month.

Ice was still noted in Rynearson Pool No. 1 on April 11 which is rather late for this area. Spring run-off was minimized by favorable thawing weather and the lack of frost in the ground.

On May 11 our last spring frost occurred and conditions then warmed up and remained sunny for most of the remainder of the month. The U. S. Weather Bureau records show that June was the coldest June on record since 1842. Many cloudy days and above normal precipitation was recorded.

A return to more pleasant summer weather occurred during July as the persistent cloudiness of June diminished allowing temperatures to climb to near normal levels. Drought conditions prevailed during August. Many hot, sunny days put great moisture stress on corn, buckwheat and hay fields. A heavy rain on the last day of the month was a welcome relief to refuge agricultural crops. Droughty conditions prevailed in September with only about one-half the normal rainfall being recorded. The first killing frost occurred on September 28 which is about two weeks later than normal.

October weather was characterized by many cloudy, cool days resulting from cold air masses aloft. These conditions were responsible for twice the normal amount of rainfall for the month. November precipitation was very light with temperatures about normal. Open water remained in most refuge pools until the last week of the month when temperatures dropped to the low teens. The first heavy snowfall for this area fell on December 7th and by the end of the month 21 inches had fallen.

#### B. Habitat Conditions

#### 1. Water

Water management at Necedah is to a large degree dependent upon rainfall on the refuge and on the watershed just to the north. During the past year precipitation was considered close to normal and the availability of water was not a serious management problem. The average rainfall at the refuge is 32.26 inches and during 1969 a total of 29.60 inches was recorded.

Although the yearly average was close to normal, precipitation was not as well distributed throughout the year as we would have liked to see it. Generally the spring thaw was gradual and pools were maintained at close to desired elevations during the early runoff period. June rainfall was above normal and raised pools somewhat higher than we had planned. Then in July, August, September and November, rainfall was lower than normal resulting in water levels being slightly less than desired in some pools during the fall waterfowl migration.

Rynearson Pool 2 was drained for moist soil food production in June and a good stand of millet, smartweed and bidens developed. With the dry summer we were a little concerned about having enough water to flood this unit in the fall, but above average precipitation in October saved the day. The pool was flooded and waterfowl made excellent use of the unit.

Freeze up occurred in mid-November with pools slightly below normal elevations. This should allow us to store some of the early spring runoff and have pools at desired levels by nesting season next spring.

#### 2. Food and Cover

The abundance of food and cover at Necedah during the past year would have to be described as good. There was a bumper crop of acorns and pin cherries which produced a tremendous amount of wildlife food. We didn't make any quantitative measurements of the acorn crop but as an example a doe and two fawns were observed eating acorns under the same oak tree every evening for over a month, and there were still many acorns on the ground. This is the type of mast production we had over much of the refuge. Toward the end of the year as winter set in, deer and turkeys were still making heavy use of acorns as evidenced by the pawed up snow under oak trees. Blue berries also produced well this year as did a variety of other miscellaneous species throughout the refuge. During the summer we observed that Greater Sandhill Cranes fed heavily on blue berries so possibly our controlled burning which stimulates blue berry production has an added benefit for these birds.

Aquatic plants such as pondweeds, elodea, coontail and wild celery grew well in Rynearson No. 1 Pool and this pool supported most of our diving duck use. Rynearson Pool No. 2 was drained through the summer months to grow moist soil foods and there was an excellent crop of millet, smartweed and chufa in this unit. When flooded the moist soil foods in Pool 2 are the most attractive feeding area on the refuge for waterfowl and this year was no exception. The Sprague Pool produced several dense mats of elodea which were heavily fed on by widgeon and coots during the fall migration. This pool when lowered in the fall also produced numerous flats of needlerush and spikerush which were browsed by Canada geese.

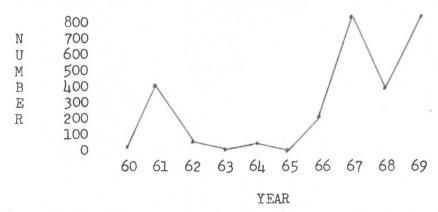
Refuge agriculture crops were well used by wildlife. We had planted 47 acres of corn and 54 acres of buckwheat. All of the buckwheat was consumed by the end of the fall waterfowl migration and most of the corn was gone. This year for the first time, water was spread in the middle and lower Canfield agriculture units to improve use of the crops by waterfowl. This was done by installing a riser and a culvert in the Little Yellow River Ditch and raising the water to back it into the fields. Results were excellent and waterfowl ate every bit of food in the fields where there was water. Some corn remained unused in fields where no water was spread. Geese also made very good use of the 40 acres of rye planted for fall browse. When the geese arrived most of the rye was about 4 inches tall. By the time migration was over it had been eaten down to ground level.

#### II. WILDLIFE

#### A. Migratory Birds

#### 1. Whistling Swans

Swan use at Necedah is erratic with peak populations occurring in the fall during some years and during the spring migration in others. Usually swans stop for only a short rest on their migration and often the number flucuates considerably from year to year. Following is a comparison of the peak population during the past 10 years:



During the past year, 800 whistling swans visited the refuge during the week of April 6. They quickly moved on and no swans were observed until the fall migration when 5 were seen the week of September 28.

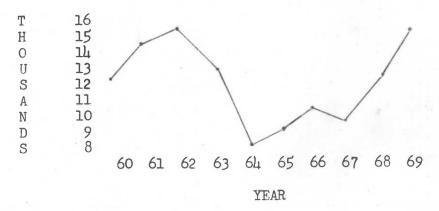
#### 2. Geese

Spring migration began the week of March 16 with the arrival of 80 Canada geese. Within the next two weeks the population built up to 2,810 as more migrants from the south joined the early arrivals. Most of our spring goose use occurred in the Sprague and Rynearson Pools. By the end of April all migrants had passed through and our population stabilized at 90 summer residents. Spring migration was typical this year as we usually have a 1500 to 3000 peak with geese migrating through the area for about 5 weeks.

Summer residents were scattered through the refuge with several pairs on each pool. These pairs produced 70 young which is average for the refuge. As usual our goose population built up during July and August as birds from throughout the area staged on the refuge. The August goose population reached 390 geese this year.

Fall migration got underway the first week in September with a trickle of geese arriving. The big movement of geese began the last week of September when the refuge population reached 15,200 which was the highest peak since 1962. The trend in Canada geese

using Necedah has been on the increase since 1964 as shown in the following:



Almost all of the fall goose use occurred in the Sprague and Rynearson Pools and the refuge agriculture fields.

#### 3. Ducks

Duck use at Necedah was unusual this year in that the spring peak was the highest in the past five years and the fall peak was the lowest. This comparison is shown in the following table:

	Spring	Summer	Fall
1969 1968 1967 1966 1965	12,190 3,070 7,190 3,615 4,130	4,880 3,560 4,770 3,595 3,535	14,500 22,730 19,505 15,915 17,535

PEAK DUCK POPULATIONS

Duck use during the spring and fall migration occurred mainly on the Rynearson and Sprague Pools, while breeding pairs were pretty well scattered throughout the refuge. As usual, mallards, teal, widgeon, ring-necked and wood ducks continued to be the main species using the refuge.

For several years we had conducted dummy nest studies to get some idea of predator activity regarding our waterfowl production. These studies showed there was a high loss of the dummy nests which we felt was also true of natural nests. As a result of these studies an animal control program was approved and conducted this year during the nesting season to determine if nesting success could be increased significantly. Following is a table which summarizes some of the

information gained from this animal control work:

#### Waterfowl Production Success 1967 - 1969

Year	Breeding Pairs	Dummy Nest Success	Average Brood Size	Computed Production
1967 1968	792 567	.15	5	594 714
1969*	634	•32	6.5	1,318

\* animal control program

Brood observations also increased during 1969 lending weight to this comparison. At present we plan to continue the dummy nest studies and animal control work for two more years.

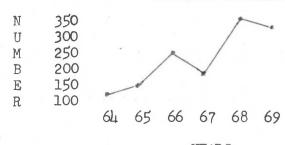
#### 4. Coots

The first spring migrant coots arrived the week of April 5 and reached a peak of 890 the following week. This is near the average number that stops at the refuge. A breeding population of 50 remained through the summer to produce 50 young. By mid October the fall population reached 6,945 which was also very near the average for Necedah. Principle feeding areas were the Sprague Pool and Rynearson Pool No. 1.

#### 5. Other Water Birds

Greater Sandhill Cranes continued to show good use of the refuge. We were especially glad to see this since they are classified as rare in the Bureau's Red Book publication of rare and endangered species. The peak fall population this year was 325. Slightly less than last year but still showing a gradual increase when compared to the past five years.

#### Peak Sandhill Crane Numbers



YEARS

We are hopeful that this increase is a response to the management program which is opening up grass and marsh areas around refuge pools

through logging and controlled burning. Aldo Leopold in his book Sand County Almanac mentions the flocks of Sandhill Cranes that frequented this area years ago when it was more open due to fires.

There has been no significant changes in the status of other marsh and water birds. The Great Blue Heron rookery in the Sprague Pool remained the same size and produced about the same number (50) of young as last year. Pied-billed grebes, Green Herons, American Bitterns, and Rails occurred in relatively the same numbers. The only unusual occurrance was one Great Blue Heron that remained after all the pools were frozen and all the other birds had migrated south. It appeared to fly normally and finally left near the end of December.

#### 6. Shorebirds, Gulls and Terns

Killdeer, woodcock, snipe, yellow legs, and upland plover were commonly seen throughout the summer and early fall. The herring gull was the only species of gull seen this year and then only occasionally in early fall.

#### 7. Doves

Mourning doves were common from early spring through September and their number increased throughout the summer indicating good nesting. A peak population of 700 fed heavily in refuge buckwheat during late August and early September.

#### B. Upland Game Birds

Wild turkeys were reduced drastically during the 1968-1969 winter. Deep snow that crusted over after a freezing rain in January prevented them from scratching through for food. This no doubt caused mortality as well as losses from the freezing rain itself. Very few turkeys were seen through the late winter and spring and it was estimated the population dropped from a high of 400 in 1968 to a low of 20 - 50 in the spring of 1969. Several good sized broods were observed during the summer indicating those that survived reproduced well.

Ruffed grouse populations have remained essentially the same as last year. We have not made drumming counts but estimate grouse numbers by using transect methods when cruising timber or checking deer or turkey areas by snowmobile. Grouse populations dropped following the freezing rain last January, as did turkeys, but have built up again following a fair nesting season.

The remnant population of sharp-tailed grouse is still holding out in the Blair field on the north end of the refuge. This year we observed 8 males on the dancing ground compared to 4 last year.

#### C. Big Game

At the beginning of 1969 white-tailed deer were concentrated in several areas because of deep snow. Weather conditions turned more favorable in February and March which benefited deer considerably. We did find a few fawns that didn't make it through the winter but losses were light. Observations during the summer showed a ratio of .85 fawns : 1 Doe. Parts of the refuge were open for the 3 Wisconsin deer seasons and an estimated 409 deer were taken (30 during early bow, 244 during gun season, and 135 during late bow season). The bow season harvest figures are fairly accurate but the gun season figures are an estimate based on the registered kill in Unit 56 which was 5.2 deer killed per square mile. The refuge is in Unit 56 and has 47 square miles of deer habitat open to hunting. Therefore 47 x 5.2 = estimated kill of 244. Not the most accurate method, but the best we can do without manpower to maintain checks on all the roads leading into the refuge. As the year ended deer were making use of feed made available through logging operations and seemed to be having no problems.

#### D. Fur Animals, Predators, Rodents, and Other Mammals

Coyotes were often observed during the past year and an occasional fox was seen. Their populations have changed little during the past several years. Beaver, muskrat and otter on the other hand have increased. There was no trapping season for beaver in Wisconsin during 1969 and the increase of this species caused us many headaches plugging culverts and water control structures. Otter sign is also common and refuge visitors who happen to see an otter often mention how much they enjoyed it. Raccoon continued to be numerous and an animal control program was put into effect during the waterfowl nesting season. Badger have started to become more in evidence and many holes were dug between Pools 1 and 2. In the past only an occasional badger digging was seen. Other fur animals observed during the year included skunk, oppossum, mink, weasel and woodchuck.

## E. Hawks, Eagles, Owls, Crows, Ravens and Magpies

Red-tailed, Marsh and Sparrow hawks were the most common hawks occurring on the refuge, and a noticeable migration of Marsh hawks was observed in March.

Both Golden and Bald eagles frequented the refuge especially during the spring and fall waterfowl migration seasons. During the summer and winter only an occasional eagle was seen. The winter population of eagles counted below Petenwell and Castle Rock Dams was 10 this year compared to 25 last year.

In February, several members of the Wisconsin Ornithological Society reported seeing a Great Gray Owl on the north end of the refuge. This species had not been recorded at Necedah before, but according to

Peterson's Bird Guide, should be found here occasionally. The Great Horned Owl was the most common owl on the refuge during the past year.

Crows and Ravens were common and as usual concentrations were seen in the fall.

#### F. Other Birds

No other additions to bird list or unusual observations to report.

#### G. Fish

During the past year the Sprague Pool was open to the public for fishing. Northern pike and bullheads were the main species caught with some good catches of pike being made. Bullheads appear stunted as there are large numbers of them but average only a couple inches long. In June we helped personnel from the La Crosse Fish Control Laboratory collect bullheads from the refuge which are used in their chemical testing.

#### H. Reptiles

No significant information to report. Snapping turtles were often observed laying eggs along refuge roads.

#### I. Disease

Nothing to report

#### III. REFUGE DEVELOPMENT AND MAINTENANCE

#### A. Physical Development

#### 1. Water Management

Hauled 32 cu yds rip-rap to riser on Coaver Road above Pool 2.
Removed trash rack from No. 1 Dam and put in stoplogs to shut
off flow of water through broken lift gate.
Repairs to dike on Pool 19 and also on Pool 27.
Construct riser from excess jet engine containers, install it
on 6' culvert and install unit on Canfield road.
Build up ditch bank on south end of lower Canfield agricultural
Unit and install culverts on lower and upper end so field
could be flooded with water for maximum waterfowl use.
Removal of many beaver dams in water control structures.

#### 2. Road and Trail Maintenance

Install steel bridge over the Little Yellow River Drainage Ditch where it enters Pool No. 2. Material obtained from excess property. Push dirt fill in low spots with D-7 tractor on fire trail north of Rynearson No. 1 pool.

Extend firebreak trail around Carpenter Unit west of Pool 2. This completed firebreak road system for controlled burning on south end of refuge.

#### 3. Fencing and Posting

Posting three refuge deer seasons and then remove all signs.
Install posting for new self-guiding auto tour route on refuge.
Construct and install outdoor bulletin board near observation tower site where self-guiding auto tour begins.
Assemble and install one large refuge sign at Bewick Trail entrance into refuge on south boundary.
Construct and install new "Office" sign and headquarters directional marker for entrance sign on Highway 21.
Re-stained two large refuge recognition signs.
Replaced many rotted boundary marker posts and replaced damaged signs.

#### 4. Buildings

Painted office-service building, headquarters shop and storage building.

Some re-modeling work in bathroom of Q-ll and install 220 volt outlet in basement.

#### 5. Equipment

Install roll bars on Farmall and Oliver tractors
Install mesh guard to protect operator on D-7 tractor from being injured while rolling down trees with rolling chopper.
Converted excess sheeps-foot roller into a rolling chopper to roll down non-merchantable timber.
Complete engine overhaul of Lake Mills Hatchery truck transferred to Waubay Refuge.
Constructed heavy duty bumper for new Ford 4-wheel drive truck.

#### 6. Miscellaneous items

Repairs to pump and replace electric motor on pump for headquarters water system. Repairs to refuge telephone line.

#### B. Plantings

#### 1. Aquatics and Marsh Plants

Rynearson Pool 2 was seeded with both Japanese and red millet. Approximately 50 acres were seeded in two ways. One method was to broadcast seed from a boat as the water was being drained and the other was to broadcast by hand after the pool bottom was dry enough to walk on. Of these two methods, riding in a boat is definitely easier than carrying a sack of millet through the wet mud. We could tell no difference in the stand that developed.

In addition to the areas broadcast seeded, we also disced up 20 acres. This resulted in an excellent growth of smartweed and millet.

Pool 2, as mentioned in other sections of this report, when flooded in the fall was one of the preferred feeding areas on the refuge for waterfowl.

#### 2. Trees and Shrubs

Planted 750 spruce trees around the refuge boneyard to help screen it from the public using the Grand Dike Road. Also planted ornamental Juniper shrubs around office.

#### 3. Upland Herbaceous Plants

No planting of this type was done

## 4. Cultivated Crops

All farming was done with refuge equipment and by refuge personnel. A total of 47 acres of corn, 54 acres of buckwheat, and 40 acres of rye was planted. As usual these crops were planted in the strips which alternate with the permanent grass strips in the Canfield, Iron-top, and West Yellow fields. We felt the yield of these crops was very good with corn averaging over 80 bushel per acre and buckwheat 25 bushel.

Corn ground was plowed in late April. Then rotovated, packed, fertilized and seeded in one operation in May, and then atrazine and 33-0-0 side dressing were applied in June.

Buckwheat acreage was rotovated, fertilized, packed and seeded in one operation which was the only time we had to go over this ground all year. Fertilizer applied was 100 lbs/acre of 6-10-20 and seed was planted at 1 bushel/acre.

Rye was grown for fall browse by rotovating under volunteer rye from last year and drilling 1/2 bushel per acre after rotovating. This was done in August and no fertilizer was applied.

The Parham-Becker field which had been cleared several years ago but had not seeded in well was limed in late 1968 and seeded to legumes and fertilized this year. A mixture of Vernal alfalfa, red, ladino, and alsike clover equalling 6 pounds per acre was planted. Success was fair but not as good as we had hoped because of the below normal moisture in July, August and September.

#### C. Collections and Receipts

#### 1. Seed or other Propagules

Where volunteer rye was expecially thick, it was combined prior to rotovating for fall browse. This produced 88 bushels of cleaned rye seed. After seeding 23, we now have 55 bushels on hand. We also picked up 1500 lbs of red millet seed from Tewaukon NWR.

#### 2. Specimens

A Greater Sandhill Crane shot by a hunter just off the refuge was salvaged and taken to a taxidermist for mounting. Cranes are shot every year and hopefully with a mounted specimen at headquarters we can educate hunters to the difference between Canada Geese and Greater Sandhill Cranes.

#### D. Control of Vegetation

During 1969, the following brush and weed control programs were undertaken:

- 1. On June 2 and 3rd, 47 acres of corn was sprayed with Atrazine 80W from our Hanson boom sprayer to control quackgrass (Agropyron repens). The chemical was applied at the rate of 3 lbs per acre diluted with water at the rate of 32 gallons per acre. The chemical did a very good job and our corn yield was one of the best on record.
- 2. During the period 7/15 to 8/20, 10,000 gallons of water mixed with 80 gallons of 2-4-5-T was sprayed on oak sprouts (Quercus spp.) and willow (Salix spp.) in drained Rynearson No. 2 Pool and in two areas on the Rynearson pool margins that had recently been cleared of oak. This job involved spot spraying of clumps. The Oliver tractor with power-take-off Hanson pump, pulling a 240 gallon tank on rubber was used. The tractor operator sprayed the clumps from the tractor seat.

Within two weeks after spraying approximately 80% of the clumps were dead. The application rate was 4 lbs acid equivalent per acre. Costs are broken down on Form NR-12.

The results from our 1968 spraying Proposal 68-2 was very good. Spraying was accomplished with the mist blower until it broke down. Some of the best kills on the refuge have resulted from spraying with the mist blower at the time of the summer when the woody plants have used up most of their root reserves.

#### E. Planned Burning

In 1969 most of the prescribed burning was concentrated during the summer months. We are continuing to evaluate the effectiveness of summer burning as compared to spring or fall fires and feel that the summer burns are giving the best results in killing unwanted woody vegetation. It also increases the number of days of potential burning weather and involves less risk of wildfires.

Nine burns were completed in the summer for oak sprout control and goose browse. One spring fire and 1 fall burn were used for slash removal. A total of 1,056 acres were burned at 38¢ per acre.

The largest and most complete burn was the area just south and north of Rynearson Pool No. 1. A total of 463 acres was burned to control oak sprouts. Following the fire all sprouts appeared dead and we are hopeful the results are good. This will be evaluated during the coming spring.

Fifty-nine acres were burned in the Scientific Area. This is a jack pine, oak and aspen area where the only management involved is controlled burning. Eventually this area should revert to an oak savanna type and is already beginning to take on these characteristics.

The table on the following page shows each burn and corresponding weather and costs.

F. Fires

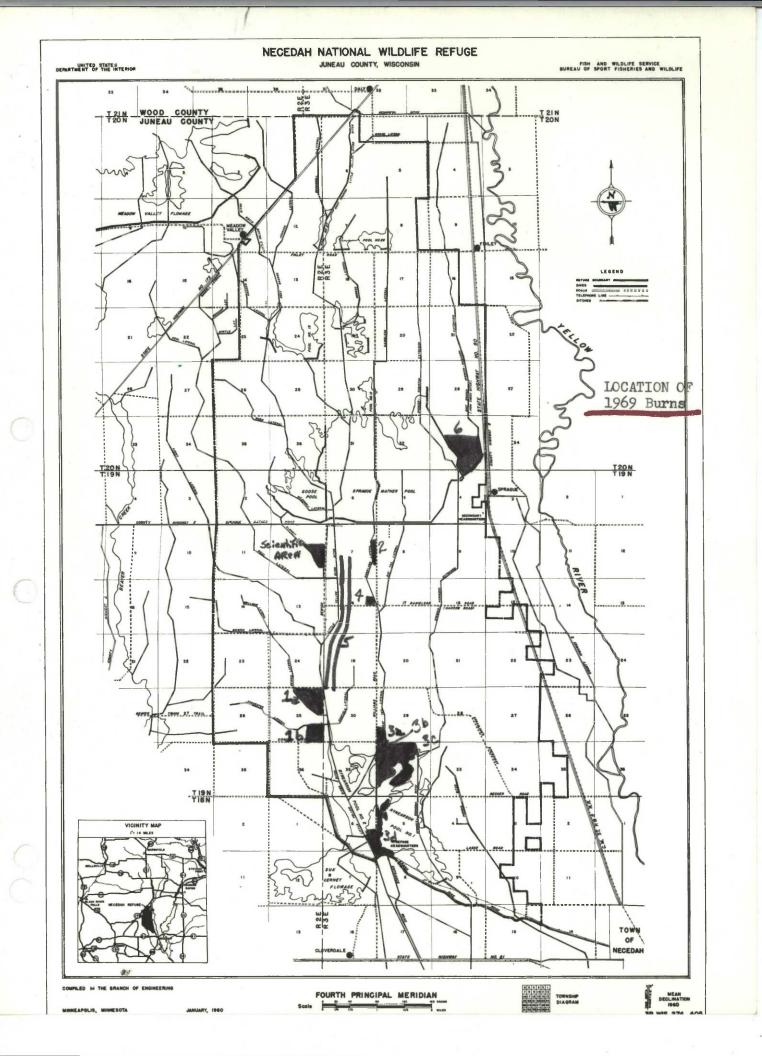
None

1969 Fire Weather and Costs for Controlled Burns

Date	Area Burned	Acres Burned	Temperature	Spread Index	Buildup Index	Relative Humidity	Wind	Total Cost	Cost/Acre
4-25-69	1	110	72	51	25	42	SW-18	\$18.23	.17¢
8-19-69	, 2	19 .	81	20	65	50	NE-10	32.82	1.73
8-20-69	3a	18	73	20	67	55	NE-15	23.41	1.30
8-20-69	4 Scientific	47	73	20	67	55	NE-15	14.96	•32
8-25-69	Area	59	87	29	82	42	N-8	48.76	.83
8-25-69	<b>3</b> b	10	87	29	82	42	N-8	9.81	•98
8-26-69	3 <b>c</b>	361	85	37	85	1414	SW-12	81.90	•23
8-27-69	3d	102	81	36	87	55	SW-13	46.51	•47
9-1-69*	5*	70	68-83	10-14	15	41-60	5-15	45.24	.65
9-10-69	lb	46	63	12	14	47	NW-6	14.24	.31
12/1-2/69	9 6	214	42	20	45	58	NE-8	65.79	.31

\*Grass strips - burned whenever possible

Average cost/acre = 0.38¢ avg costs over 50 acres 0.33¢ " " under " " 0.68¢



#### IV. RESOURCE MANAGEMENT

#### A. Grazing

One grazing permit was issued for cattle on Unit No. 6 which is along Highway 80 on the lower east side of the refuge. The unit has grown up into brush through non-use over a period of years. The revenue from 62 AUM's amounted to \$10.90.

#### B. Haying

One haying permit was issued for removal of legumes from the refuge. Hay was removed from the Carpenter and Laske fields in two cuttings. We could not even give hay away from the Canfield Units so the hay strips were moved with a rotary mower and burned to provide new growth for fall goose browse. A total of 77.2 tons of hay were removed with revenue amounting to \$193.00.

#### C. Fur Harvest

An Animal Control Plan was approved and placed into operation in April which allowed the removal of waterfowl nesting predators. A local trapper was hired and he removed 153 raccoons, 7 skunks, 3 fox and 3 coyotes.

Trapping interest for the fall trapping season was not very encouraging. Only three trappers applied for permits. We had hoped to have at least four applicants. The three trappers went right to work on muskrats and trapped a total of 628 in the first two weeks. The weather turned cold and pools began to freeze over so the trappers quit trapping. Not much effort was spent by the trappers to trap anything else. The only other pelts taken were 18 raccoons and 5 mink. Income from the sale of the government's 1/2 share of muskrat and mink amounted to \$377.50.

#### D. Timber Removal

There were 23 timber permits in force during 1969 removing 6,764.35 cords. Revenue received by the refuge from these timber sales amounted to \$36,973.03. The gross amount received by the permittees when they sold this pulpwood at local paper mills was approximately \$153,000.00 for refuge timber products.

The table below gives the cordage removed and the average price received:

Species	Cords	Average Price/Cord
Jack pine	5,721.82	\$6.28
Oak	660.03	1.00
Aspen	382.50	1.00

As of December 31, 1969, we had 12 timber permits still in force. A complete summary of all timber sales in included on form NR-11.

One of our permittees began using a timber harvesting machine this year (photo in picture section). This machine is capable of cutting, limbing and piling 4 cords an hour. In our smaller and less dense timber the peak production was slightly over 3 1/2 cords per hour. The machine is on tracks so the ground is scarified for natural regeneration.

Sixty-five acres of Red Pine plantation was thinned this year. The permittee took supressed, scarred and double trees. This amounted to about 40% of the stand.

Part of the management of the water areas is to re-establish grass on the pool margins. This is where most of our large timber sales are located. The small sales are set up in strips or in patches to help natural regeneration.

#### E. Commercial Fishing

None

#### F. Other Uses

One permit was issued to a beekeeper to set up an apiary in the refuge buckwheat fields. A charge of 10¢ per hive for 20h hives was made.

#### V. FIELD INVESTIGATIONS OR APPLIED RESEARCH

#### A. Banding

Canada geese were the only species banded this year. Our assigned banding quota was 500 and we managed to band 296. Actually we felt we were fortunate to band this many as the geese simply would not use our banding sites except occasionally just after daybreak or sunset. For the banding that was done we used 30' x 60' fringed nets with rockets. Corn and buckwheat was used for bait. The best banding site was on the south end of Rynearson Pool No. 2 and no geese were caught on either of the sites in Pool No. 1.

The main purpose of banding geese at Necedah is to determine what role Necedah could play in helping to break up the Horicon flock. Or more specifically, could development work at Necedah hold more birds out of the Horicon area. So far not enough direct recoveries of Necedah banded birds have been returned from Horicon to definitely show this.

#### B. Artificial Waterfowl Nesting Structures

During 1966, 67 and 68, a study was conducted to evaluate artificial nesting structures at Necedah and Horicon Refuges in Wisconsin. The study was over during this report year, but we did check the structures to determine if any were used. None were, as was the case during the original 3 year study. However during the study nine goose nests had been lifted onto structures to imprint the young. Five of these nests hatched and we were especially interested to find out if this imprinting worked. If it had the goslings should have been old enough to nest this year and use the structures. None did.

#### C. Simulated Nest Study and Animal Control

This study is discussed in the migratory bird section under ducks on page 6.

#### VI. PUBLIC RELATIONS

#### A. Recreational Use

Total refuge visits during 1969 was 74,017 which was an increase over last years 41,807. Wildlife observations were the No. 1 reason visitors stopped at the refuge this year with 53,346 visits. These visits occurred mainly during the spring and fall waterfowl migration seasons. Deer were common throughout the summer and many people drove the refuge roads in hopes of seeing some.

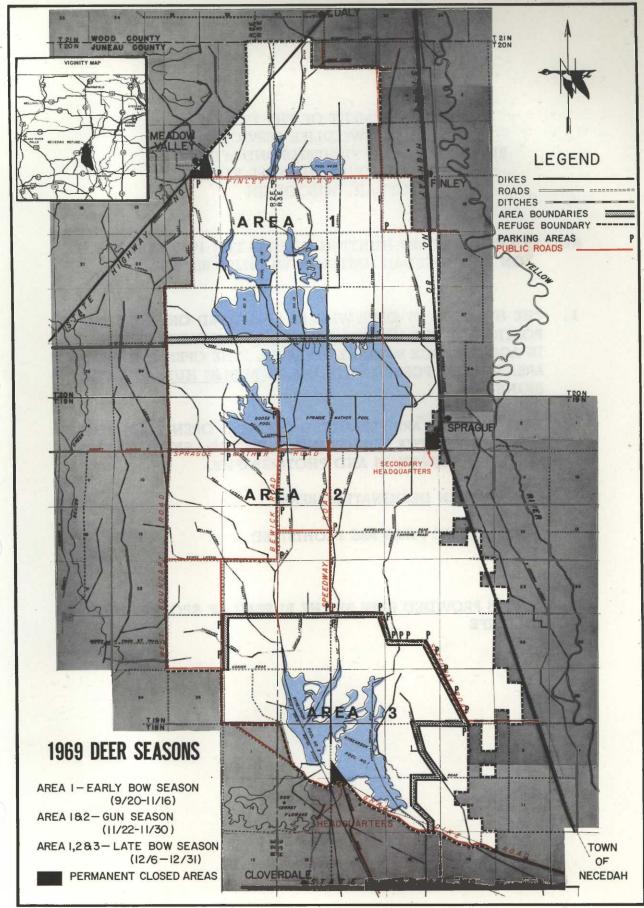
This year we started a self-guided auto tour. Six points of interest were designated along refuge roads and were marked accordingly in a tour leaflet. The tour started at the observation tower and ended at the Goose Pool. A paper towel dispenser attached to a bulletin board was used to dispense the tour leaflets. This worked very well.

Along with the auto tour and observation tower we developed a nature trail this year. The trail is .4 miles long. It begins at the observation tower and winds along the south edge of Rynearson Pool No. 1. This trail was made by mowing the excess grass, spraying with 2-4-5-T and diesel fuel, and raking it along the edges. Although there were no trail markers, visitors could follow the dead grass path very easily and it took us less than a day to put it in. After this trail was used a short time the dead grass was worn off and it looked very natural. Many favorable comments were received from visitors.

Along with a good crop of blue berries came an even better crop of mosquitoes. A few brave souls attempted to pick berries but except for those picked by Sandhill Cranes most of the berries went unharvested.

DEPARTMENT OF THE INTERIOR

FISH AND WILDLIFE SERVICE BUREAU OF SPORT FISHERIES AND WILDLIFE



COMPILED IN THE BRANCH OF ENGINEERING

MINNEAPOLIS, MINNESOTA

JANUARY, 1960

FOURTH PRINCIPAL MERIDIAN



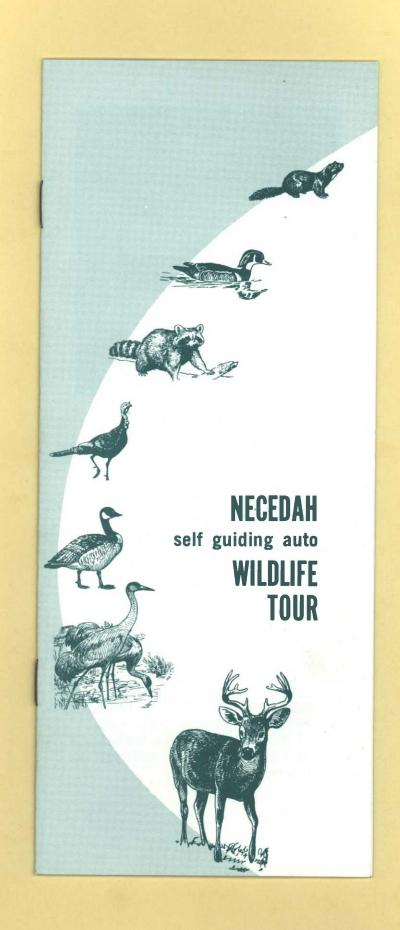
MEAN DECLINATION 1960 3R WIS. 274 409

# U. S. DEPARTMENT OF THE INTERIOR FISH AND WILDLIFE SERVICE BUREAU OF SPORT FISHERIES AND WILDLIFE NECEDAH NATIONAL WILDLIFE REFUGE NECEDAH, WISCONSIN

#### RULES COVERING DEER HUNTING DURING THE 1969 SEASONS ON THE NECEDAH NATIONAL WILDLIFE REFUGE

- 1. THE HUNTING OF DEER WILL BE PERMITTED ON THE OPEN PORTION OF THE NECEDAH NATIONAL WILDLIFE REFUGE IN ACCORDANCE WITH STATE LAWS. THE OPEN HUNTING AREA WILL BE POSTED WITH GREEN PUBLIC HUNTING AREA SIGNS.
- 2. NON-HUNTERS ARE PERMITTED ON AREAS OPEN TO PUBLIC HUNTING FOR THE FOLLOWING PURPOSES: SIGHT-SEEING, NATURE OBSERVATION AND PHOTOGRAPHY.
- 3. PARK ONLY IN DESIGNATED AREAS.
- 4. CAMPING AND FIRES ARE PROHIBITED.

THIS MAP IS PROVIDED FREE BY THE BUREAU OF SPORT FISHERIES AND WILDLIFE



# Welcome to Necedah National Wildlife Refuge.

We invite you to take our auto tour route through the refuge—an 11-mile trip lasting at least 30-45 minutes. If you want to see wildlife, plan your trip for early morning or early evening, and drive slowly. Migratory birds are most numerous here in April and October. Please don't disturb the wildlife you see—others taking the tour will be following you.

Watch for the numbered sign posts along the route which correspond to sections of information in this leaflet. The signs are brown with yellow numbers.



#### **Observation Tower**

(Park at designated area and walk to tower)

Ducks and geese are part of our wildlife heritage. From the tower, you may see mallards, blue-winged teal and Canada geese. Watch the marsh edges—you might see sandhill cranes, great blue herons and spotted sandpipers. In the air, you may see black terns and, possibly, a bald eagle. Other marsh dwellers you might see include deer, mink and muskrat.



## **Controlled Burning**

To your north, you can see an area which will be burned periodically to maintain it as a grassland. This land was completely wooded until 1967 when it was logged off by local loggers for pulpwood. It will be burned off every three years so that prairie grasses can be established.

Grasslands bordering marshes are preferred over woodlands by many species of nesting waterfowl and sharp-tailed grouse.

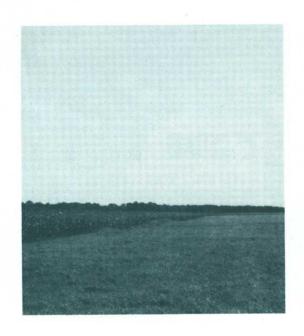


#### **Beaver Dam**

Just to the west of the road, you can see the work of one of nature's most industrious engineers, the beaver. Although the beaver does cause problems at times by plugging culverts and water control structures, he often creates many acres of ponds and marshes used by waterfowl.

The box-like structure in the tree to your left is a nesting box for wood ducks. Wood ducks nest in natural cavities in trees. Nesting boxes are placed in wooded areas where these natural cavities are lacking.

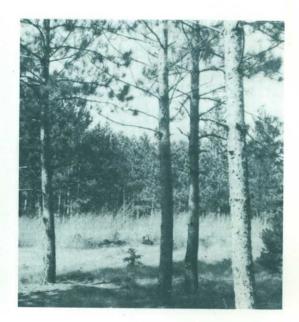
NECEDAH self guiding WILDLIFE TOUR WILDLIFE REFUGE SPRAGUE MATHER POOL Sub Headquarters 3 NORTH Me y Morning appropriate an 1/2 1 11/2 SCALES IN MILES WISCONSIN



#### **Farm Fields**

In the fall, large numbers of geese feed on the corn and buckwheat planted here by the refuge for wildlife food. Deer are frequent visitors to these croplands.

Wild turkeys were once native to this area and were reestablished here in 1953. They are doing well here and often can be observed along the edges of these fields.



#### **Pine Plantation**

Timber management on this refuge improves wildlife habitat. Timber harvest by local loggers helps the community's economy as well as the wildlife found here. This pine plantation was planted in 1936 by the Civilian Conservation Corps. It is an example of a timber stand thinned to allow more sunlight to reach the forest floor. This increases the growth of wildlife food plants. The result is a good feeding and resting place for white-tailed deer.



#### Sprague-Mather Pool

This open-water area is a favorite spot for the diving ducks—scaup, ring-necked ducks and canvasback—during their migrations. Along the dikes, you might see eastern kingbirds and many small mammals including mink, muskrat and raccoon who find homes here.

To your left you see the Goose Pool. This is drained in summer to allow plants such as millet and smartweed to be grown. The seeds of these plants are excellent waterfowl food. It is made available to them by reflooding the pool just before the fall migration begins.

This completes our wildlife trail. Thank you for being our guests on this tour. We hope you enjoyed it.

The easiest way to reach the town of Necedah is to go east on the Sprague-Mather road to Wisconsin Highway 80, then south (to your right) about 8 miles.

Please feel free to return to refuge headquarters by way of the tour road if you have any questions or want to see something again.

For further information you may contact:

Refuge Manager Necedah National Wildlife Refuge Star Route Necedah, Wisconsin 54646

FPI MI-11-12-68-5M-3013

# B. Refuge Visitors

Date	Name and Organization	Purpose
1/14	Ralph Plowman, DNR, Friendship, Wis. Walter Lueck, " Necedah	Forest Protection
1/22	Ken Brown, Writer, LaCrosse Tribune Dave Hames, DNR, Warden, LaCrosse, Wis	Courtesy Call
3/19	Cal Clark, DNR, Warden, Sparta, Wis. Rodney Sando, USFS, USDA, St. Paul	" Prescribed burning
4/8	Ralph Plowman, DNR Friendship Walter Lueck, DNR Necedah	Forest Protection
4/10 & 4/15	Al Rose, DNR Babcock Darold Walls, BSFW, St. Paul	Predator trapping
4/16	Rodney Sando, USFS "Charles H. Wick, USFS"	Prescribed burning
4/19 4/25	Robert Scott, USFWS, Wash. D. C. John S. Crosby NCFES Columbia, Mo.	Tour of refuge Prescribed burning
	Robert M. Loomis " " Rodney Sando, USFS, St.Paul	"
	Jim Gritman, BSFW, Wash. D. C.	n ·
	Wm. Aultfather, BSFW, Mpls. Minn.	II .
5/1	Marvin Duncan, BSFW, Mpls	Public Use
4 /- 5	Ed Stevenson, BSFW, Mpls	11
5/14	Gordon Lamphier, DNR, B.R. Falls Ralph Plowman, DNR, Friendship	Fire control school
6/17	Ray Anderson, DNR, B.R. Falls	Telephone right-of-way
6/18	Everett Whealdon, BSFW, LaCrosse, Wis	bullheads for laboratory
7/14	Dr. Wm. E. Green, BSFW, Winona, Minn.	Refuge management
9/2	Ron Payne, US Geo. Survey, Mo.	Land surveys
9/9	Mel Palmer, Ohio State Univ.	Tour of refuge - resource
	Marino J. Tedesco, P. Alecre, Brazil	" management " Graduate students from
	Wale Aderayo, Nigeria Olumuyiwa Osiname, Nigeria	" U. of Wis.
	Lenom Cajuste, Haiti	11
	Ron Hensler, Lowell, Wis.	11
	Aviar Brah, Uganda	11
	Mulugeta Assefa, Ethiopia	11
9/25	Ben Hubbard, DNR, Babcock, Wis Roger Amundson, DNR, Black River Falls	Refuge Management
9/29	James Monnie, BSFW, Mpls	Horicon Public Relations
	Marvin Duncan, BSFW, Mpls	" meeting
	Robert Personius, BSFW, Horicon	11
	Omer Swenson, BSFW, Horicon	11
	Jay Hammernick, BSFW, Upper Miss. Ref Jerry Lienecke, BSFW, " "	11
	Roger Priest, USGMA, Eau Claire, Wis.	11
	Miles Camery, USGMA, Madison, Wis.	11
10/8	Don Jerabek, DNR, Friendship, Wis.	Forest Protection
	Philip Gothard, England	Resource management
10/9	Wm. Stokes, Writer, Milwaukee Journal	Information for story
10/13	Frank King, DNR, Madison, Wis.	Tour of refuge

Date	Name and Organization	Purpose
10/15	Miles Camery, USGMA, Madison, Wis. Roger Priest, USGMA, Eau Claire, Wis	Enforcement
10/16	James Monnie, BSFW, Mpls Art Hawkins, BSFW, Mpls	Tour of refuge
10/17	George Brakhage, BSFW, Mpls Prof. Raymond Anderson, Stevens Point w/15 wildlife students	Refuge Management
10/21	Charles Allen, Biology Teacher Necedal w/31 students	h Tour of refuge
10/26	Dr. Mackie, U. of Minnesota with 35 wildlife mgmt students	Tour of refuge
10/26 12/30 12/31	Louis Kowalski, BSFW, Mpls Jim Lennartson, BSFW, Piedmont Refuge Darold Walls, BSFW, St. Paul	Inspect Dam No. 29 Visit Predator control
	Warden, Necedah.	of Natural Resources Valley Game Manager, esources.

#### C. Refuge Participation

- 1/11 Brown gave slide talk to Professional Agriculture Group (40 people) at Eagle Nest Flowage, Juneau County.
- 2/2 Samson took 12 members of Ripon Sierra Club on refuge hike.
- 2/10 Brown attended annual Boy Scout dinner in Necedah.
- 2/11 Brown gave slide talk to Petenwell-Castle Rock Lakes Association meeting held in Necedah (15 people).
- 2/13 Brown gave talk at Ducks Unlimited dinner in Stevens Point, Wis. (200 people).
- 2/14 Brown gave slide talk to 30 members of Mauston Lions Club.
- 2/24 Samson attended Technical Action Panel meeting in Mauston, Wis.
- 2/24 Lennartson to Washington, D. C. attend Fire Behavior School. 3/7
- 4/7-25 Brown attended Management Training Session at Arden Hills, Minn.
- 4/10 Samson to Hillsboro High School for slide talk at FFA Banquet.
- 4/12 Lennartson gave tour of refuge to Janesville Club Scouts
- 4/14 Lennartson gave slide talk to Necedah American Legion Post

- Samson attended Basic Refuge Managers Course at Arden Hills, Minn. 4/27-5/23
- Brown and Johnson gave tour to 50 members of American Pulpwood 5/7 Association.
- Brown gave slide talk to 50 members of American Pulpwood Association. 5/8
- Rudolph to Arden Hills, Minn. to assist Dr. Wm. Green with 5/11-
- administration of the training course. 5/23
- Brown met with State Forest Protection District personnel regarding 5/14 a training session.
- Brown met with personnel from Badger Army Ammunition Plant to 5/15 discuss wildlife management of the area in accordance with Sikes Act.
- Johnson and Brown gave tour of refuge to 20 students from Mauston 5/27 High School Conservation Class.
- Brown attended Juneau County Technical Action Panel meeting in 7/1 Mauston, Wis.
- Johnson took 40 4-H students on refuge tour. 7/1
- Brown met with 14 Directors of Wisconsin Bowhunter's Association. 7/14 This group represents about 6,000 bowhunters.
- Johnson took 30 4-H Club members on tour of refuge. 7/24
- Brown to University of Wisconsin, Madison, to Institute in
- 8/3**-**8/15 Communications for Environmental Management.
- Brown and Johnson gave tour of refuge to 50 members of the 9/5 Wisconsin Conservation Congress.
- Brown took group of 7 foreign students studying land use in 8/25 the United States on tour of refuge.
- Johnson gave talk to 40 people at New Lisbon American Legion 10/9 meeting.
- Brown gave talk to 70 people attending Hustler Sportsman Club 10/10 meeting.
- 10/15 Brown on WBKT-TV LaCrosse, Wis.
- Brown gave talk to group of wildlife students from Wisconsin 10/16 State University, Stevens Point, Wis. and also gave them a tour of the refuge discussing wildlife management.
- 10/21 Brown gave talk and tour of refuge to Necedah High School Biology class.

- 10/21 Rudolph gave slide talk to 30 members of Juneau County Historical Society.
- 10/26 Brown discussed management with Dr. Mackie and 35 students from University of Minnesota. Toured part of refuge.
- 11/4 Brown gave talk to Mauston Kiwanis (25 people)
- 11/12 Brown and Johnson attended beaver trapping hearing in Black River Falls, Wis.

#### D. Hunting

#### Waterfowl

As in the past, the Necedah Refuge was not open to waterfowl hunting, while the 60,000 acre Meadow Valley Wildlife Area which adjoins the refuge and is managed by Wisconsin, was open to the public for hunting. The hunting season for ducks began October 4 at noon and ended November 12. Bag limit was 4 with some species restriction on canvasback, redhead, wood duck and hooded mergansers. Two additional teal and scaup were also allowed during part of the season. Hunting around the refuge is primarily for geese and duck shooting was not significant except in the Meadow Valley Flowage where duck hunting was fair. The hunting season for geese began October 4 at noon and ended December 12. Bag limit was one Canada goose per day and a total of 5 with other species of geese that could be taken. In Wisconsin this year it was unlawful to hunt Canada geese without a special federal goose hunting permit and report card. The report card had to be filled cut and mailed at the close of the season so that the harvest could be estimated. These report cards have not been summarized yet so we cannot report the harvest around the refuge. On the State hunting area just south of refuge headquarters 8,000 hunters checked in 1,150 Canada geese. In general hunting conditions on this public hunting area are crowded and hunting would have to be described as low quality.

#### Deer

Parts of the refuge were open for the 3 deer seasons held in Wisconsin. During these, 9,138 hunters took 409 deer. In the 2 bow seasons, hunting was for either sex deer, while in the gun season it was for bucks with a fixed quota of doe tags issued. The late bow season continues to draw a crowd to the refuge for opening day and this year 4,835 hunters showed up. They took 135 deer.

#### E. Violations

Following is a summary of the cases which occurred this year. Very good cooperation was received from both Bureau and State enforcement personnel in handling violations.

Name	Violation	Cost
Olson, Arthur R. Platteville, Wis Meler, Florian G. Milwaukee, Wis Weaver, Wayne G. Franklin, Wis. Hammond, Kenneth, Lamon, Ill. Magee, Eddie, Maywood, Ill. Schroer, Fred, Wisconsin Rapids Miller, Henry, Wisconsin Rapids, Stranz, Joseph, Wisconsin Rapids	Hunt in closed area " " Fish in Sprague Pool " Hunt in closed area " "	\$30.00 30.00 30.00 30.00 25.00 25.00
U. S. COMMISSIONER'S COURT, Tomah,	Wisconsin	
Anderson, John, Sharon, Wis. Gunderson, Gary, Kenosha, Wis Heidel, Donald, Friendship, Wis Stanford, Herbert, Madison, Wis Fauver, Frank, LaCrosse, Wis	Camp on refuge Block fire lane w/auto " Camp on refuge Travel restricted area	\$25.00 20.00 25.00 20.00 20.00

#### F. Safety

Safety meetings were held on the following subjects and twelve safety films were also shown:

Shop Safety
Gun Safety
Farm Accident Prevention
Water Safety
Safety Attitude

Fire Fighting
Defensive Driving
Cold Weather Safety
Heavy Equipment Operation
Operating Small Equipment

Three accidents occurred during the year.

- 1. Maintenanceman Harold Carter sprained his back while working on a culvert and riser. No lost time was involved.
- 2. The door of a refuge sedan delivery vehicle was damaged while backing it out of the garage. Repair bill was \$167.00.
- 3. A deer hunter was shot in the leg during the refuge gun season. Several other hunters were in the area but no one would admit doing the shooting. The hunter advised he will have to be off work about 6 weeks but a permanent disability was not expected.

#### VII. OTHER ITEMS

#### A. Items of Interest

Biologist Fred Samson transferred to the Division of Research in September and is now working at the Patuxent Wildlife Research Station in Laurel, Maryland. His assignment there will be to study black duck and pesticide relationships.

The position vacated by Fred Samson was filled for a short time by Dave Hoff who came to Necedah from Shiawasee Refuge. Dave returned to school in December to work on a masters degree.

Forester Jim Lennartson also transferred this year from Necedah to the Piedmont Refuge in Georgia. He was especially interested in the opportunity to work with saw timber size stands of bottomland hardwoods and pine on his new assignment. Jim was replaced by Al Johnson who transferred to Necedah as Forester from the Tamarac Refuge.

#### B. Photographs

All photographs taken by Brown except R-69-12, E-9; R-69-16, E-4; and R-69-17

#### Sections of report credits

Brown 1B; II; III B,C,D; V A,B,C; VI D,F; VII

Rudolph 1A; III A; IV A,B,C; VI E and typing

Johnson IV D; VI A

#### SIGNATURE PAGE

Submitted by:

David J. Brown

Refuge Manager

Title

Date: February 6, 1970

Approved, Regional Office:

ASST

Regional Refuge Supervisor

# WATERFOWL

(1)			Week	s of	repor	ting	perio	d.		
Species	1/1-1	1/3-31	1/12319	1/10-25	1/2652/1	2/2-5	:0/0-35	2/16=22	2/23 23/1	10
										13/2-
Whistling	1 1									
Trumpeter										
eese:			The state of the s				A VELL VENI T			
Canada										1 4
Cackling					Part of Care					
Brant					The Facilities					
White-fronted		Total Total								
Snow								The second		
Blue		Tall Vision				THE STREET				
Other										-
ucks:							100000000000000000000000000000000000000			1
Mallard										
Black								Manual Inc.		
Gadwall										
Baldpate							1			
Pintail						Par Dalla Salata				-
Green-winged teal										
Blue-winged teal						+				_
Cinnamon teal						N. 1				
Shoveler								- 2		+
Wood										
Redhead										
Ring-necked		2000								-
Canvasback										
Scaup										-
Goldeneye										-
Bufflehead										-
Ruddy									-	-
Other										-
Conci	_		-							
	No. Control							EALTH ST		

(Rev. March \_\_/53)

\_\_\_A T E R F O W L
(Continuation Sheet)

MONTHS OF January 1 TO April 30 , 19 69 Necedah REFUCE (3) (4) Total Production: : A summary of data rec of reporting period Estimated Production Weeks 3/29: 1/5:1/12:1/19:1/26: 1/30 13:14:15:16:17: 18 Peal(1)umber: waterfowl :Broods: Estimated 3/9-15 days use : seen : total Species 11 12 : Swans: of data a unas 005 Whistling 5.600 Trumpeter TOPTOT Geese: sentative 60 a aff Canada 140 2610 905 900 36.963 Cackling Branthe nest White-fronted Snow Bluesborting Period: RECTUENCE Other Ducks: Mallard 40 2850 330 1370 830 800 395 15,120 15 Black 90 10 2.815 200 30 10 Gadwall 60 Baldpate 380 3.080 the Pintail 120 81.0 25 530 130 Green-winged teal 90 130 110 6.775 Blue-winged teal 10 100 550 330 330 325 11,250 Cinnamon teal Shoveler 10 40 Wood 180 220 220 135 4.880 Redhead 7,060 2600 Ring-necked 10 240 130 45 10 21,320 Canvasback 70 190 Scaup 130 1340 30 65 30 10,970 Goldeneye 190 590 11,90 20 16.050 Bufflehead 100 14.540 100 1760 100 30 Ruddy 30 210 Other C. Maryanser 10 20 180 60 1.890 Hooded merganser 1 150 30 170 eak Numbe 15 1.495 Coots: 590 30 60. 50 7.060 over)

(5)	(6) (7)	
	Peak Number : Total Production	SUMMARY
Swans 5.600	800 30 190	Principal feeding areas Nynesuson Pools 1 = 2, Confield
Geese 9 16/036.963 :	2.510	agricultural unit
Ducks Jh. 755	12,190	Principal nesting areas Rynear on Fools 1 & 2, Sprague-
Coots 99 7.060 :	890 : 30 300	Mather Flowage and Seepage areas
Shoveler Wood		Reported by Mariel Brun
Blue-winged teal Cinnamon teal		David / Brown, Refuge Kanager
<ul> <li>(1) Species:</li> <li>(2) Weeks of Reporting Period:</li> <li>(3) Estimated Waterfowl Days Use:</li> <li>(4) Production:</li> </ul>	In addition to the birds listed reporting period should be added given to those species of local Estimated average refuge popular Average weekly populations x number of young productions.	mber of days present for each species.
Whistling Trumpeter Geese:	sentative breeding areas. Broc 10% of the breeding habitat.	d counts should be made on two or more areas aggregating stimates having no basis in fact should be omitted.
(5) Total Days Use:	A summary of data recorded under	r (3).
(6) Peak Number: (7) Total Production:	Maximum number of waterfowl pre	sent on refuge during any census of reporting period.
VIEW DOLL	(S) .	(3) (p)

Interior Duplicating Section, Washington, D. C.

# WATERFOWL

(1)			Week	B of	repor	ting	perio			The same
(1) Week ending Species	5/1-3	5/10	5/17	5/24	5/31	6/76	6/14	6/2	6/28	7/20
Vans: Whistling										
Trumpeter										_
ese:										_
Canada	50	80	80	95	225	-	مرس د	n select	3.00	-
Cackling	- 00	00	(2,0)	85	1115	155	155	155	175	1
Brant										_
White-fronted										
Snow										
Blue	14. 4.30		100							
Other	111111111111111111111111111111111111111				French St			COLUMN TO SERVICE	The state of the s	
cks:	- P. J. J. Z. J.		1 1 1 1 1 1	THE NAME OF THE OWNER,	DECEMBER OF			25251131131		
Mallard	450	450	4 50	450	Sho	740	840	940	1.030	1,03
Black	45	45	4 50	45	45	75	75	75	75	7
Gadwall	THE PARTY OF THE P							F2001-2-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1		
Baldpate						20	20	20	20	2
Pintail	2 (2)				MENTAL SERVICE	20	20	20	20	2
Green-winged teal	140	140	140	140	140	210	210	210	225	22
Blue-winged teal	350	350	350	350	350	500	550	600	600	60
Cinnamon teal										
Shoveler Wood	15	15	15	15	15	15	15	15	15	1
Redhead	150	150	150	150	150	250	300	300	345	34
Ring-necked	100	16	16			76	36	26	3 00	_ ,
Canvas back	150	45	45	45	45	15	15	15	15	1
Scaup	65	65	65	- 65	10					
Goldeneye	09	03	0)	0)	30	P. L. C.				
Sufflehead	30	30	30	30						
Ruddy	- 20	32	30	30				Name of State of Stat	* Application	
ther locded Merganser	15	15	15	15	15	10	10	10	10	
	110	50	50	50	50	50	50	60	70	8

# (Rev. March 1953) (Rev. March 1953) (Continuation Sheet)

MONTHS OF May 1 TO August 31 , 19 69 NECEDAH REFUCE (4) Weeks of reporting period (3) : Estimated : Production · 7/6-12 : 7/19 : 7/26 : 8/2: 8/9 : 8/16 : 8/23 : 8/31 : Peal(I)umber: waterfowl :Broods: Estimated 13:14:15:16:17: days use : seen : total Species Swans: Of J Days need Legolde A Summer of date Whistling Trumpeter MED STOIL Geese: Benca 8 8 25.190 884TU70 E201175 175 300 300 300 390 390 300 Canada Cackling Brant nee: Average White-fronted Snow Blue borging beriog: Other Ducks: 608 1,030 1,030 1,030 1,030 1490 1.550 112,730 60 1,030 1.030 Mallard 75 75 8,495 30 75 15 75 75 100 Black Gadwall 20 20 20 20 20 20 20 1.840 Baldpate 20 20 20 20 20 20 20 20 20 1.840 Pintail 225 225 225 225 225 225 290 350 26,180 70 Green-winged teal 500 600 600 600 600 900 1700 1,900 85,200 15 250 Blue-winged teal Cinnamon teal 15 15 15 15 15 1,845 Shoveler 15 15 15 43,105 345 345 345 345 345 345 855 900 17 150 Wood Redhead 15 15 Ring-necked 15 15 3,090 15 15 15 Canvasback Scaup 1,630 Goldeneye 720 Bufflehead Ruddy Other Hooded Merganser 10 10 10 10 10 10 10 10 1,385 Coots: Total Days Use : 80 100 5 50 100 100 100 100 100 100 9,460 over)

(6) Peak Number : Tota	(7) 1 Production	SUMMARY SUMMARY
0	0	Principal feeding areas Rynearson Pools 1 & 2. Sprague-
390	70	Mather Flowage, Poels 13 & 19.
4,880 : 3	1,318	Principal nesting areas Rynearson Pools 1 & 2. Sorague-
110 :	50	Mather Flowage, Pools 13 & 19.
345 345	365 36	Reported by Aland Bound
CALL CALL		David J. Brown, Refuge Manager
In addition to the reporting period a given to those specific estimated average	e birds liste should be add ecies of loca refuge popul	0 1,030 1,030 1,650 1,550 50, 60 60
sentative breeding 10% of the breeding	g areas. Brong habitat.	uced based on observations and actual counts on repre- od counts should be made on two or more areas aggregating Estimates having no basis in fact should be omitted.
TT TS	T3 T+	er (3). esent on refuge during any census of reporting period.
	O  390  4.880  110  2UCTIONS (See Secs In addition to the reporting period given to those special spec	Peak Number: Total Production  O  390  4.880  1.318  110  50  **CUCTIONS (See Secs. 7531 through the birds lister reporting period should be add given to those species of local Estimated average refuge populations x not be a set of the breeding areas. Brough the breeding habitat.  A summary of data recorded und

Interior Duplicating Section, Washington, D. C. (Bear 1953

Conti 1-1 3-1750a

HECED VH

MOMPHES OF MAN L

# WATERFOWL

			Week	s of	repor	+ 1 n ~	2024	a		
(1)							perio			
Species	9/1-6	9/7-13	9/18-20	9/21-27	:9/28-10/4	: 10/5-11	:10/13-18	10/18-25	10/28-11/1	11/2
wans:									10/20-01/	
Whistling					5		1			
Trumpeter			RAPHIES.							
eese:										
Canada	390	425	560	9,150	15,200	9,605	7,650	6,515	3.550	2,1
Cackling				DELITE THE		1,635	500		50	
Brant				E RELEASING A	NAME OF THE PARTY OF		Participation and the	STATE OF LAND		
White-fronted			THE WAY IN THE					ESTANTAL DE		
Snow	THE PROPERTY OF		2 7 7 7 7 7		25	600	300	50	20	
Blue				Maria Maria Andrews	50	600	500	10	20	
Other								The same of the sa		
icks:	165 24 3 (Silvin				1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -		and d			-
Mallard	1,550	860	880	780	3.050	1,335	2.585	4.040	1.650	1,1
Black	100	155	360	230	250	205	575	580	275	2
Gadwall			20	30	80	155	130	325	150	
Baldpate	20	50	3,530	3.880	1,025	2.450	3.950	5,090	2,300	-
Pintail	20	1,0	10	50	50	125	295	5,090	10	1,3
Green-winged teal	the same of the sa	325		15						
Blue-winged teal	300		1,070		225	25	1,80	230	30	
Cinnamon teal	1,600	615	530	635	525	120	225	15		
Shoveler	25	1 × × × · · ·		100000000000000000000000000000000000000	324	6.12	47.71			
Wood	1,000	700	210	350	300	300	350	80	50	
Redhead	1,000	100	The state of the s		The state of the s	300	50	75	25	
Ring-necked	35	35	15	130	150	2,500		2,575	825	-
Canvasback	35	35	15	130	150	2,500	3,500	50	30	8
Scaup						500	300	1,120	325	-
Goldeneye						500	300			2
Bufflehead				74.6				50	100	1
Ruddy					-	1-1		10	7.00	
				15	25	65	35	150	100	
Other H. merganser					10	25	10	25		
	1									-
oot:	24	80	315	600	3,025	6.945	5,900	4.080	2,600	9

(Rev. March 1953)

Ture Total Description Sheet)

MONTHS OF TO Dec. 11 , 19 69 REFUCE Becadah Weeks of reporting period : Estimated (2) (3) (4) : Production : waterfowl Les (1) muper: :Broods: Estimated Species 11 Swans: One'r pele neet SUMMIST. recorded unde **b2** Whistling Trumpeter TARTOT O Geese: s shou 118,700 m 500 100 as agg Canada 4,100 15,665 Cackling Brant a nest WAGISES White-fronted 6,765 Snow 8,260 Bluesborting Period: Other Ducks: 129,560 35 750 PO Mallard 21,320 130 Black 5,575 Gadwall 125 135,770 Baldpate 5.010 Pintail 40,0;0 Green-winged teal 28,255 Blue-winged teal Cinnamon teal 160 Shoveler 22,590 Wood 1,000 Redhead The last Ring-necked Canvasback 700 T.770 Scaup 2,330 Goldeneye - 560 Bufflehead 3,000 Ruddy Other Coots: Total Days Use : Total Production 171,165 (50) over)

(5)	(6) (7)	The second secon
Total Days Use	Peak Number : Total Production	SUMMARY
Swans 2	3 :	Principal feeding areas Sprague, Goose and Rynearson
Geese 12 149,570	15,275	Pools, Canfield Agriculture fields.
Ducks 529 465	14,500	Principal nesting areas
Coots 171,465 :	6,945 :	18/9/19
Spoveler		Reported by David Banens
Blue-winged taal Cinnamon teal		David J. Brown, Refuge Manager
(1) Species: (2) Weeks of	In addition to the birds listed	7534, Wildlife Refuges Field Manual)  on form, other species occurring on refuge during the din appropriate spaces. Special attention should be and national significance.
Reporting Period:	Estimated average refuge popula	tions.
(3) Estimated Waterfowl Days Use:		mber of days present for each species.
(4) Production:	sentative breeding areas. Broo	ced based on observations and actual counts on repreductions and actual counts on repreductions and actual counts on repreductions described actual counts described a
(5) Total Days Use:	A summary of data recorded unde	r (3).
(6) Peak Number:	Maximum number of waterfowl pre	sent on refuge during any census of reporting period.
(7) Total Production:	A summary of data recorded unde	L (#). n g period : Satimated : Production

Interior Duplicating Section, Washington, D. C.

3-1750a Cont. 1-1

(other than waterfowl)

Refuge Necedah Monti

Months of January 1 to and 30 195.69

(1)	(2			3)		4)	on conce:	(5)		(6)
Species	First	Seen	Peak N	umbers	Last	Seen		Production		Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. Water and Marsh Birds: Sandhill Crane Great Blue Heron Pied-billed Grebe Green Heron Common Loom Double-crested Cormorant Eared Grebe	Use the condition of the sign	3/2h h/1 h/h h/h h/h h/h h/12	40 - 50 40 - 50 30 - 40 10	Late April	TI H M	Present	orting per hose spec iformes ( (Charadi	ition, an tion to t riod shou les of lo o Ciconii itformes)	d list gr he birds ld be add sal and M formes an	oup in A.O listed on ed in apprational a Gruiifor
I. Shorebirds, Gulls and Terns: Killder Herring Gulls Orester Vellowlegs Lesser Vellowlegs Lesser Vellowlegs Lesser Sandwiper Gorgen esses TA bleeveens Brigs:  Marre-Munded goae Woslutus goae TII Deass sug tireous:	12461	3/25 L/L L/23 L/23 L/23	50 - 60	cmal vis	1 "	Present	red by			
(1)	-	(5)	-	(over)		(4)		(5)		(e)

(1)	(2	)		3)		4)	(5)		(6)
Mourning dove White-winged dove	6	3/17	130-150	Late April	Still F	resent .			
*									
IV. Predaceous Birds: Golden eagle	1	3/18	Occasion	al visitor					
Duck hawk Horned owl	Yest	round re	aident		4	100			
Magpie		78.3	32 - PO TO	pe stady	40	B		1	
Raven	Yest-e	round re	mident	1/16	al .				3
Sald Sagle	1	1/24		ate March	2	4/20	1		
Red-tailed Hank Rough-legged Hank	2	2/7 2/13	15-20 15-20	id-April	Still	resent			
Great Grey Owl	1	2/25		Deservation					
Karsh Havk	8	2/28	15-20	arly March	Still	resent		1	-
Sparrow Hawk	1	4/7	20-30	Mid-April	57			1 1	
Red-Shouldered Hawk	1	4/7	5-10 5-10	19	64	Penarted	by David	a Barre	

INSTRUCTIONS

(1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National

significance. Groups: I. Water and Marsh Birds (Gavilformes to Ciconilformes and Gruilforme

II. Shorebirds. Gulls and Terns (Charadriiformes)

III. Doves and Pigeons (Columbiformes)

IV. <u>Predaceous Birds</u> (Falconiformes, Strigiformes and predaceous Passeriformes)

(2) First Seen: The first refuge record for the species for the season concerned.

(3) Peak Numbers: The greatest number of the species present in a limited interval of time.

(4) Last Seen: The last refuge record for the species during the season concerned.

(5) Production: Estimated number of young produced based on observations and actual counts.

(6) otal. Estimated total number the species using he refuge during the period con med.

INT .- DUP. SEC., WASH., D.C.

Water and Marsh Birds:

59:

(other than waterfowl)

Months o

Months of to August 31 × 69

59312

	(1) Seen. The	last r	2)		3)2000768	,	4) 889800	concerned	(5)		(6)
	Species	First	Seen	Peak N	umbers	Last	Seen		roduction		Total
	Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
	(2) First Seen. Th	Tirst re	Thes reco	rd for th	e species	for the	Season Co	nosrned.			
I,	Water and Marsh Birds:		}	IV. PEG	отсебла в	TERE / 1000	AATTTATE			riformes)	
		1.6				Annual Control of the		s, Strigi	formes an		
	Sandhill crane	Sunnel	resider	t 100	Late At	2056 56	11 presen	gara <b>j</b> riil	28	20 50	100
	Great blue heron	UTLICSHO	: Greups	20-30	SI SHO MS	LEP RTLGS		rmes to C			
	Pied-billed grebe	tate space	s. Speci	20-30	TOD BOOMY	d be give		e species			40
	Common loon	m, other	mbecree &	20-30	on reluga	Curing 1		ing perio			u gbbio-
	American bittern	er. Alo	6/3	15-20	, sewilara	", "term	920 7		to the same	10	
	Bared grebe	the ciri	5/100	as filmo	TO the A	orol cpe	5/14				an A.O.U.
	Sora rail	_	5/26	20-30	Late Aug		resent	DEL PASSA	no sud 1	ist group	in A.O.U.
	Virginia rail		5/26	20-30	10	11		DEALE	9 83,085		
	gory solly .	7	3/30	T 1	1/26	7	Reported	- pà ka		AND REPORT SERVICE	
					- 11		40 Foll	1/1	1	1	
			- 10						- 1		
				occasion	E 1		w · 1				
	Goopern havic			10-15	2				1		
II.	Shorebirds, Gulls and	= 1	-0	30-90	4			-		1	
11.			26.	30-35	14	- 1		1			
	Terns:		10	20-30	ALLEGE !	=		P P		1	
	K V V Car	aumme	resident	9.06(4)10	August	still	present	1	-	. 1	
	Greater yellowlegs	(a) Camaraga	# Comment	80-100	6/9	#	W W		1	1	
	Leaser yellowlegs	poffice.		77 77		92777			1	. 1	
	Least sandpiper	89	22	20	12	St111			-1	1	
	Solitary sandpiper	_ 3	5/28	30			10		· 1		
	Chair ad gandadage	2	5/28	40	1/10	3.0	187			- 1	
IV.	White-rusped sandpiner		5/28	20	11	18					
	Pectoral sampiper	1	5/28	40	**	12					
	Common tern	10	5/28	few	August	- 17			100		
	Mlack term	12	5/28	Common	N	11	# /=0	1			
991	erring gull	4	5/28	5	5/28	5	5/28			SEE 1	950
II.	ling-billed gull	12	5/28	12	5/28	12	5/28				
	Upland plover	2	5/28	COHRION	August	still	present				
_	. 111	(2	1	(5	(over)	(4			(5)		(e)

(1)	(2)	20.00	(3	1020	(4			(5)	1	(6)
II. <u>Doves and Pigeons</u> :  Mourning dove  White-winged dove	Summer 1	residen	t 300-lico	August	still	present			200	600
	3-11	21.50	10		- 10					
IV. <u>Predaceous Birds</u> :	2 1	3/20	50	H H	1.0	- 10				
Golden eagle	1	7/5	1 70	7/5	1	7/5				
Duck hawk		CASH	30 :		N (9)		i i		1	
Horned owl	Summer 1	esider	t con	EOB .	still	present			4	
Magpie			90-T00	6/2					-	
Raven	2/16/960 - 1	celhes		gattatag	OSTIT	bassens				
Crow		esider			still	present	1			
Red-tailed hauk		17	20-30	August	10					
Marsh havk		.	10-15 30-40		"					
Coopers hauk		**	10-15					-		
Goshande		10	occasion	2.	. 10		1			
Broad-winged hawk	n		H		10	. 80				
Barred owl	19	19	W	-						
Bald eagle	1	7/16	1	7/16	1	Reported	by 1	wed I	Brown	
Throtata rail		5/25	20-30	7/28	11		David	J. Brow	2	
			INSTRU	JCTIONS		E-mounts				

form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiiformes) significance.

II. Shorebirds. Gulls and Terns (Charadriiformes)

III. Doves and Pigeons (Columbiformes)

IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)

Colonies Nests

Total

(2) First Seen: The first refuge record for the species for the season concerned.

Water and Marsh Birds:

(3) Peak Numbers: The greatest number of the species present in a limited interval of time.

(4) Last Seen: The last refuge record for the species during the season concerned.

(5) Production: Estimated number of young produced based on observations and actual counts. other than waterfowt)

(6) T Estimated total number of a species using the refuge during the period concer 1. INT .- DUP. SEC., WASH., D.C.

59317

# MIGRATORY BIRDS (other than waterfowl)

Refuge Necedah Months of Sept. 1 to Dec. 31 195x 69

(1) Species	(2) First Seen	(3) Peak Numbers	(4) Last Seen	(5) Production	(6) Total
Common Name	Number Date	Number Date	Number Date	Number Total # Total Colonies Nests Young	Estimated Number
I. Water and Marsh Birds:  Pied-billed Grebe Great Blue Heron Green Heron American Bittern Common Loon Virginia Rail Sora Rail Sandhill Crane	Summer resident	75 Sept 20 75 Fairly common Sept 0ct 1 Occasional in Sept 325 Oct 11	l late Dec thru September mid-Sept 1 Oct	That dries with the state and the state and a state and	in A D W in A D W si wn a Appro- sal salforner)
II. Shorebirds. Gulls and Terns:	2 10/18  Suntan Suldent  Suntan Pasions  Sunta	6 Mile 945	1 12/15  Sold Sold Sold Sold Sold Sold Sold Sold		
Killdeer Woodcock Common Snipe Greater Yellowlege Lesser Yellowlegs Least Sandpiper Herring Gull Upland Plover	Summer resident	Common thru Sept	Sept.		
III. Doves and Pigeops: Mourning dove White-winged dove	Sunner resident	(over)	SS case subs		

	(4) (5)	(6)
ons:	Late Sept	
ds:	Nov 9  Saw-whet Owl Febr Screech Owl Barred Owl Great Gray Owl	tion
ga baq wk	12/15 Nov present Nov Dec	
	Dec	bed by Bariel J. Brown, Refuge

#### INSTRUCTIONS

(1) Species:

Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gavilformes to Ciconiiformes and Gruilformes)

II. Shorebirds, Gulls and Terns (Charadriiformes)

III. Doves and Pigeons (Columbiformes)

IV. <u>Predaceous Birds</u> (Falconiformes, Strigiformes and predaceous Passeriformes)

(2) First Seen: The first refuge record for the species for the season concerned.

(3) Peak Numbers: The greatest number of the species present in a limited interval of time.

(4) Last Seen: The last refuge record for the species during the season concerned.

(5) Production: Estimated number of young produced based on observations and actual counts.

(6) T .1: Estimated total number of le species using the refuge during the period concer. .1.

INT .- DUP. SEC., WASH., D.C.

3-1750b Form HR-1B (Rev. Nov. 1957)

# UNITED STATES DEPARTMENT OF THE INTERIOR FISH AND WINDLIFE SERVICE BURGAU OF SPORT FISHERIES AND WINDLIFE

# WATERFOWL UTILIZATION OF REFUCE HABITAT

Refuge <u>Neced</u>			Title	menth period ending August 31, 196						
Area or Unit	(Z) Habit			(3) Use-days	(4) Breeding Population	(5)				
in 1 1 Apricarsen 1 and 3M 1/4 of refuge	Crops Upland Marsh Water Total	13 0 1,000	Ducks Geese Swans Coots Total	355,215 65,609 6,615 75,915 503,354	380 20 0 10	390 20 0 15 425				
Thearson 2	Crops Upland Marsh Water Total	292 1.606 700 7.60	Ducks Geese Swans Coots Total	296,770 291,914 0 17,510 606,194	260 10 0 10 280	270 10 0 10 290				
Sora we-Mather Fool	Crops Upland Marsh Water Total	2,000	Ducks Geese Swans Coots Total	296,265 91,480 2,170 40,345 430,260	380	508 25 0 10 425				
5 15 h Feels 7, 13, 18 19, 27, 2 5 and north 1/h of reduce	Crops Upland Marsh Water Total	7,052 1,300 800 9,152	Ducks Geese Swans Coots Total	122,935	10	150 15 0 15 180				
TOZALS:	Crops Upland Marsh Water Total	422 5, 300 5, 500 39,607	Ducks Goese Swans Coots Total	1,071,185	1,160 90 0 50 1,290	1,318 70 0 50 1,320				
	Crops Upland Marsh Water Total		Ducks Geese Swans Coots Total							
.eps (601) 5	Grops Upland Marsh Water Total		Ducke Geese Swans Coota Total		64 219/4/9					

Refuge

perendal)

#### UPLAND GAME BIRDS

Months of January 1 to April 30 , 1969

Form NR-2 - UPLAND GAME BIRDS\*

(1) Species	then Pitante as toence hetsen			tes oc r type to the	(4) Sex Ratio		(5) emoval		(6) Total	(7) Remarks
Common Name	Cover types, acreage of hal	Acre	mber oods	Estimated Total	Percentage	Hunting	For Re- stocking	arch	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
duffed Brouse	23,600		ler Remark	ned van	d be indicated, by	pancy	areas n of Hag h	ad mu	1,100 des	Winter mortality higher than normal due to heavy snow cover. Wet apring conditions may curtail nesting.
Marp-tailed irouse	20,000 1	.ods ,sdr	y, pheasar	turkej	rily to wild	grima	lies Jable	iga .		3 observed on booming ground. Population decreasing.
leedeack	d. This may i	port perio	ing the re	ge duri	it galdaryie	er us	number plus	Lsto	toknown	Largest winter concentration observed was 8 birds as compared to over 80 last year Observations scattered.
include equin	alA vevrue n	covered i	sand ares r requeste	lation Mcally	n not specifi	b os Ljano	Lnfor	thod nent	Indicate me	Fopulation trend uncertain.
				.bt	au sd bluodi	bens	d cove	erio	e to the g	*Only columns applicat

#### Form NR-2 - UPLAND GAME BIRDS\*

(1) SPECIES: Use correct common name.

Applies particularly to those species considered in removal programs (public hunts, etc.).

Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture.

Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual

(3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding nabitat.

observations and counts on representative sample areas. Survey method used and size of

+) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.

(5) REMOVALS: Indicate total number in each category removed during the report period.

sample area or areas should be indicated under Remarks.

(6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.

(7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

\*Only columns applicable to the period covered should be used.

#### UPLAND GAME BIRDS

Refuge Months of to to Necedah (3)(4) Touty col (5) applicable t Aonug period (7)(5)(6)(1)SOAS Sex SHORT Removals Remarks Total Species Density Produced Ratio Estimated Estimated Total broods to determi - Bu Pertinent information not Hunting number Acres For Restocki ber specifically requested. using Cover types, total Per Refuge List introductions here. Percentage acreage of habitat Bird Common Name r using the the report period. This may Woodcock 12,000 in each ca. regory removed Tri co capara Charrystelens council on wet areas throughout refuse. Population other species in SYS trend unward. n applace rimarily to will turney, Include data on hesants, Snipe 5.000 Observations scattered. Inknows in representativ e preeding habitat. Population trend uncertain. oung produced, inated number pased upon observation s and actual counts Ruffed Grouse 30,000 Very wet June was not the best 1,200 r areas should e of sample area pe indicate for nesting success. ELVALLOAS and COU te on repres SHIP PLIVE urvey method used and areas. Sharp-tailed Grouse 10,000 where possi De Population status uncertain 20 - 30 Francard tyl е вішрота prim ur pe but definitely low. reverbing agricu Land, bott Wild Turkey 30,000 ODUCALE 50 - 70 Record observations this summer OVET LIPES. enough to indicate slight increase in need not except as population following last cover type found rcles winter's heavy mortality. iniormatic 18 prefaced by a stateme om the reluge manager as to the TO I ensit; per animal by dover types. This in acres ad data may be omitte I LO species of curring in limited des particularly to those species considered in removal programs (public COMPREME IT ITS FORM MI -2 - UPLAND GAME BIRDS" STRUCTIONS

#### INSTRUCTIONS

#### Form NR-2 - UPLAND GAME BIRDS\*

- (1) SPECIES: Use correct common name.
- (2)DENSITY: Applies particularly to those species considered in removal programs (public hunts. etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired 30,000 information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series That p-tailed in cuse to, our No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks. 30,000
  - (3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.
  - (4) SEX RATIO: This column applies primarily to wild turkey, phesants, etc. Include data on other species if available.
  - (5) REMOVALS: Indicate total number in each category removed during the report period.
- (6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.

(1)

Months of 10 to 10 19 19

(7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

\*Only columns applicable to the period covered should be used.

Refuge

UPLAND CAME BINDS

3-1/22 Form NR-2 (April 1946)

### UPLAND GAME BIRDS

Refuge Necedah Months of Sept. 1 to December 31 , 1969

Form NR-2 - UPLAND GAME MIRDS\*

(1) Species	(2) Density	Pr	(3) Young oduced	ies o r typ to th	(4) Sex Ratio	Timo Tuga Tuga	(5) Remove		(6) Total	(7) Remarks			
Common Name	Cover types, total acreage of habitat	Acres Per Bird	Number broods observed	Estimated Total	Percentage	Hunting	For Resstocking	For Research	Estimated number using Refuge	Pertinent information no specifically requested. List introductions here.			
offed Grouse	30,000	ar'ss.	nder Ren	u bed	ld be indica	yoda	reas	s TO	1,100				
harp-tailed Graphuhite Quail	5,000	ervatio	ago nogi	as ed.	produced, t	ed ld	of y	umber reedi	sentative l	YOUNG PRODUCED:	(3)		
		sants,	sy, phes	plrud	rily to wild	rina	ies p able.	lqqa Lleva	15	SEX RATIO:	(4)		
oodeoek	12,000	ent gal	nub bevo	у теш	each categor	al	umber	tsl.	Unknown	REMOVALS:	(5)		
nclude eqir	periodoo, ta may i	report durin	ring the se refug	ge du nto t	ing the refu migrating i	r us	numbe lus t	otal rds p	Unleague	TOTAL:	(9)		
include .	ered in survey. Ala	rea cov	n and a	ltsti fiçal	stermine pop on not speci	b od ldau	used infor	thod ment	Indicate me other perti	HEMARIUS:	(7)		
				. bs	should be us	bea	cove	polus	le to the p	y columns applicab	#Gml		
			1.										
195		Î.	la .										
50-55V													

#### INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS\*

(4)

(1) SPECIES: Use correct common name.

(2) DENSITY:

Applies particularly to those species considered in removal programs (public hunts, etc.).

Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture.

Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management

(3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.

Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of

Mecedah.

3-1752

SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.

(5) REMOVALS: Indicate total number in each category removed during the report period.

sample area or areas should be indicated under Remarks.

(6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.

REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

\*Only columns applicable to the period covered should be used.

NECEDAH Refuge

Calendar Year 1969

(1) Species	(2) Density	(3) Young Produced	ung Removals			(5) Losses		(6) Introductions		(7) Estimated Total Refuge Population		(g) Sex Ratio		
Common Name	Cover types, total Acreage of Habitat	Number	Hunting	For Re- stocking	Sold	For Research	Predation	Di sease	Winter Loss	Number	Source	At period of Greatest use	As of Dec.	
hite-tailed Dea	r 35,000 acres of timber, brush and marsh	400	109	303 10d		ie vo in da 187. s each	n he	et itti inkbi	25	ini ber Mgu Me	record segme test odt de troce seemp, artiste see	1,450	800	
870158 8376	Harvest: 30 early bow 2lul gun season 135 late bow	ongo hadd Jon yerrus Den no be			erite Last Last	ell sique rebe re lo	9 () 9 () 1 () 1 ()	1 (1) (1) (1) (1) (1) (1) (1) (1) (1) (1	re po teses that that	repi d b	nen es hine nounce on node easta (D): Istina	is 10 DUGOSY DNIK		
	turing the past.	Daylesc	TE O		n si	ase n	È TA	of an	m Lest	12 S.	Anlica	BCVAL5:		
	t seemed laiot etablish sets	ntige wid	311		8	drican ent o	e m	ion)	20 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	tand typi:	On the	-	(表)	
	berrose and works dole	d mort go	ma		# 3	rtst	basi.	Th	CHEST 19	12 to	mathal 18	TO PECHGO TES		
	ii to letted to sayter will b	o gollostwa. 	#2 26		2 A	olino olino	repail Gar	4 6	sants hadan	is o	it ovil	EQUEDE LATE FROLTATURE		
Zir th	each opecies as determined	io aslaga		SE d	ele E ri	n to more	EA.	108	reg s midaw	id e rond	sofbal Blatt	ioffar Ri	2 (8)	

Remarks:

Reported by Ward & Brown

#### INSTRUCTIONS

# Form NR-3 - BIG GAME

- (1) SPECIES: Use correct common name; i.e., Mule deer, black-tailed deer, white-tailed deer. It is unnecessary to indicate sub-species such as northern or Louisians white-tailed deer.
- (2) DENSITY: Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) YOUNG PRODUCED: Estimated total number of young produced on refuge.
- (4) REMCVALS: Indicate total number in each category removed during the year.
- (5) LCSSES: On the basis of known records or reliable estimates indicate total losses in each category during the year.
- (6) INTRODUCTIONS: Indicate the number and refuge or agency from which stock was secured.
- (7) TOTAL REFUGE

  POPULATION:

  Give the estimated population of each species on the refuge at period of its

  greatest abundance and also as of Dec. 31.
- (8) SEX RATIC: Indicate the percentage of males and females of each species as determined from field observations or through removals.

Year ending April 30, 1969 Refuge Necedah

(1) Species	Density	d in co	Remo				(5) Total			
.ote	Cover Types & Total Acreage of Habitat	Acres Per Animal	Hunting Fur Fur Earvest	-	For Re- stocking For Re- search	numan badanaa	Refuge as	Total Refuge Furs Shipped	Furs Donated Furs	Popula-
Mink -amo	by cover types. This in the refuge manager as to the refuge; once submitt as significant changes be detailed enough to for obscure the general pit everting agriculture landard type symbols listed where possible. Fig. and counts on represent	nimel himsel him	76 53	the actual actua	refaced by in each of the control of	T-9970 T-9972 T-9973 36	38	38	43	100 - 150 300 - 500 500 - 600 100 - 150 15 - 20
Coyote  Seaver and lo  Opposum  Otter and same  by Service  tugerine	removed since April 30 fuse by Service Predator under Resdingelisted.  trapper's share, and rediction to the service decause to the stitutions of other	ntegory the red lling u namber namic	r each caken on a no fe permit nipped t	not the cites s	Remarks.  Lal namber  Local namber  Local namber  Lare 12  Local namber  Lare 12  Local namber  Lare 12  Local namber	ndicate the to ndicate the to revious year, unter. Also s n shars-trappe ndicate the nu ersonnel. Tot	UR: O	TO N	emovals:	15 - 20

Retimated total population of each meetles reported on as of April 30. REMARKS:

TOTAL POPULATION:

TO THE WILL CHATT MANUAT C THE TO A

Prices received for Gov't. share of fur: muskrat. 38 - 854 - \$32.30. 2 mink @\$8. - \$16.00 any other pertinent information not specifically requested.

REMARKS:

liscor

Reported by

116007

LALL MANNALS

(5)	estim	ats, bea ated tot	ver, coon, mink, coyote. Data on small rodents may be omitted except for all population of each species considered in control operations.)	
report nots	SPECIES:		Use correct common name. Example: Striped skunk, spotted skunk, short-tailed weasel, gray squirrel, fox squirrel, white-tailed jackrabbit, etc. (Accepted common names in current use are found in the "Field Book of North American Mammals" by H. E. Anthony and the "Manual of the Vertebrate Animals of the Northeastern United States" by David Starr Jordan.)	
(2)	the same of the same of the same of	07 6	Applies particularly to those species considered in removal programs.  Detailed data may be omitted for species occurring in limited numbers.  Density to be expressed in acres per animal by cover types. This informa-	Commo
300 - 500 300 - 600 300 - 150 15 - 60		86 86	tion is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottom land hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative	Husian Recen Skurik Paz Coyek
(3)	REMOVALS:		Indicate the total number under each category removed since April 30 of the previous year, including any taken on the refuge by Service Predatory Animal	гаукай геродо
(4)	DISPOSITION	OF FUR:	On share-trapped furs list the permit number, trapper's share, and refuge share. Indicate the number of pelts shipped to market, including furs taken by Service personnel. Total number of pelts of each species destroyed because of unprimeness or damaged condition, and furs donated to institutions or other agencies should be shown in the column provided.	epitato

Indicate inventory method(s) used, size of sample area(s), introductions, and any other pertinent information not specifically requested.

Reported by

REMARKS:

	Refuge Necedah	Year 19. 69
*	Botulism NONE	Lead Poisoning or other Disease NONE
Period of outbreak_		Kind of disease
Period of heaviest 1	osses	Species affected
Losses:	Actual Count Estimated	Number Affected Species Actual Count Estimated
(a) Waterfowl (b) Shorebirds (c) Other		
Number Hospitalized	No. Recovered % Recovered	Number Recovered_
(a) Waterfowl (b) Shorebirds		Number lost_
(c) Other		Source of infection
Areas affected (loca	tion and approximate acreage)	Water conditions
	verage depth of water in sickness eas, reflooding of exposed flats, etc.	Food conditions
Condition of vegetat	ion and invertebrate life	Remarks_
Remarks		

3-1757 Form NR-7 'Rev.June 1960)

Refuge	Neceda
1101100	

Year 19 69

				s and Re cks, tre					Plantings (Marsh - Aquatic - Upland)									
Species	Amount (Lbs., bus., etc.)	(2) C or R	Date	Method or Source	Cost	(3) Total Amount on Hand		tion of Planted	Rate of Seeding or Planting	Amount Planted (Acres or Yards of Shoreline)	Amount and Nature of Propagules	Date	Survival	Cause of Los				
Japanese Millet	1,000	R	April	fauston Coop. Fewaukon		700 lbs			20 lb/ac	25 acres	500 lbs see							
Red Millet	1,500	R	April	NWR	none	1,000 lbs	*		"		" "	"	"					
				l	1				1									

<ul><li>(1) Report agronomic farm crops on Form NR-8</li><li>(2) C = Collections and R = Receipts</li></ul>	Remarks:
(3) Use "S" to denote surplus	
lotal acreage planted:	
Marsh and aquatic 50 acres	
Hedgerows, cover patches	
Food strips, food patches	
Forest plantings_	

Fish Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge	oedah_	4 5 6	00	County	Jun	667	2	s	tate _	Wisconsin		
Cultivated Crops Grown	Share	ttee's Harvested Bu./Tons		Government' arvested Bu./ Tons	Unha	or Retur	a a A	Total creage	Cove	n Manure, r and Wate Browsing and Kind		Total Acreage
Field Corn	ACTES 5	Du . / 10115	10	500 ba	37	2,960	9-19	<b>47</b>	Type	Rye S		140
9	AST AST	and a	60	enta enta enta enta	5	a le tr	5 9	54	A Spor	Alfalfa		52
Buckhatet the year nepor to year.	ately the kinds of im	the crop results from ope if planted during the story of	nsiq egseros ils troqui	report under Bushels I nav crops satimate o waterlowl through the charles of crops satimate	word bedseyms H - p	1,350 evrsd egoro masl lo	Tibu astos to tadminis	ting period regardless for reporting planted	Tip more than one cou	Grass mix bluegrass top, timo legumos	red-	AN THE
No. of Permittees	rages ja la be	gricultural	1 50	ations	Tuteff to eraid	Haying	Opera	tions _	Fall	ow Ag. Land		ions 1
Hay - Improved (Specify Kind)	To		Acres	Cash   Revenue	Gra	zing	Numbe Animal		UM'S	Cash Revenue	ACR	EAGE
Alfalfa	77.	d man	52	\$193.00	1. Catt	200	12	The k	62	\$10.90	114	5
gevo	Annua	dabj Krug	OT Isl	TI & TIT & TITLE	2. Othe	#11 #11 #11	Apiar	20	hives	2,00	54	(buckwheat
						l Refuge					311	
Hay - Wild	0				2. Acre	age Cult	ivated	as Ser	vice 0	peration	311	

DIRECTIONS FOR PREPARING FORM NR--8'
CULTIVATED CROPS - HAYING - GRAZING

Report Form NR-8 should be prepared on a calendar-year basis for all crops which were planted during the calendar year and for haying and grazing operations carried on during the same period.

Separate reports shall be furnished for Refuge lands in each county when a refuge is located in more than one county or State.

Service

Cultivated Crops Grown - List all crops planted, grown and harvested on the refuge during the reporting period regardless of purpose. Crops in kind which have been planted by more than one permittee or this Service shall be combined for reporting purposes.

Permittee's Share - Only thenumber of acres utilized by the permittee for his own benefit should be shown under the Acres column, and only the number of bushels of farm crops harvested by the permittee for himself should be shown under the Bushels Harvested column. Report all crops harvested in bushels or fractions thereof except such crops as silage, watermelons, cotton, tobacco, and hay, which should be reported in tons or fractions thereof.

Government's Share or Return - Harvested Show the acreage and number of bushels harvested for the Government of crops produced by permittees or refuge personnel. <u>Unharvested</u> Show the exact acreage and the estimated number of bushels of grain available for wildlife. If grazing is made available to waterfowl through the planting of grain, cover, green manure, grazing or hay crops, estimate the tonnage of green food produced or utilized and report under Bushels Unharvesed column.

<u>Total Acreage Planted</u> - Report all acreage planted, including crop failures.

Green Manure, Cover and Waterfowl Grazing Crops Specify the acreage kind and purpose of the crop. These crops and the acreage may be duplicated under cultivated crops if planted during the year, or a duplication may occur under hay if the crop results from a perennial planting.

<u>Hay - Improved</u> - List separately the kinds of improved hay grown. Annual plantings should also be reported under <u>Cultivated Crops</u>, and perennial hay should be listed in the same manner at time of planting

Total Refuge Acreage Under Cultivation Report total land area devoted to agricultural purposes during the year.

# REFUGE GRAIN REPORT

(1)	(2) On Hand	(3) RECEIVED	(4)		GRAIN D	(5) ISPOSED OF		(6) On Hand	Propos	(7) ED OR SUITAB	LE USE*
Variety*	BEGINNING OF PERIOD	Period Period	DURING TOTAL PERIOD		Seeded	Fed	Total	END OF PERIOD	Seed	Feed	Surplus
Corn (shelled) Corn (seed) Buckwheat	200 1 135	0 9	200 10 135	0	0 10 54	100	100 10 95	100	40	100	
heat, Spring Rye Millet, Japanese	20 0 4	88 20	20 88 24	0	23	ic. lination e	23 10	20 55 14	55 14	20	
Millet, Proso Millet, Red Sorghum	0 3	0 30 0	8 30 3	opa.	10	8.	10	2 20 3	20 3		
Oats Alfalfa, Vernal Bluegrass	10	0 5 0	10 6 1		4	7	l.	10 2 1	10 2 1		
Timothy Alsike Clover Red Clover	0 0	0 2 6	3 2 6	nR herjec	2 3	uarces, su	2 3	3 0 3	3		
	Report all grain shall be complete to the barley—50 lb. I list entry the barley—70 lb. I list entry the barley will	maidered  in in, rye- n computing  id corn, ga  new era  net aufvar  ref 5	guivalent to guivalent to 55 lb., cats- g volume of grain separ met wheat, swpens, mis as apseide	a busine -30 lb., so granaries, stely and ed May w	Corn (si	elled)—54 b fb., mil e cubic co as flint o	lb., corn (e et50 lb., itenta (co. fi rn, yellow d	reximate we arr)—70 lb, owpens—60 lb, ow bus bus ent opro, so proso millet wheat, and or seed so	wheat— In, and nels nees deal combine covbeans wites to		

(8) Indicate shipping or collection points New Lisbon, Wisconsin

(9) Grain is stored at Granaries at secondary and primary headquarters

(10) Remarks .....

<sup>\*</sup>See instructions on back.

act it is the first of the second

whent, opring

#### REFUGE GRAIN REPORT

This report should cover all grain on hand, received, or disposed of, during the period covered by this narrative report.

Report all grain in bushels. For the purpose of this report the following approximate weights of grain shall be considered equivalent to a bushel: Corn (shelled)—55 lb., corn (ear)—70 lb., wheat—60 lb., barley—50 lb., rye—55 lb., oats—30 lb., soy beans—60 lb., millet—50 lb., cowpeas—60 lb., and mixed—50 lb. In computing volume of granaries, multiply the cubic contents (cu. ft.) by 0.8 bushels.

- (1) List each type of grain separately and specifically, as flint corn, yellow dent corn, square deal hybrid corn, garnet wheat, red May wheat, durum wheat, spring wheat, proso millet, combine milo, new era cowpeas, mikado soy beans, etc. Mere listing as corn, wheat, and soybeans will not suffice, as specific details are necessary in considering transfer of seed supplies to other refuges. Include only domestic grains; aquatic and other seeds will be listed on NR-9.
- (3) Report all grain received during period from all sources, such as transfer, share cropping, or harvest from food patches.
- (4) A total of columns 2 and 3.
- (6) Column 4 less column 5.
- (7) This is a proposed break-down by varieties of grain listed in column 6. Indicate if grain is suitable for seeding new crops.
- (8) Nearest railroad station for shipping and receiving.
- (9) Where stored on refuge: "Headquarters granary," etc.
- (10) Indicate here the source of grain shipped in, destination of grain transferred, data on condition of grain, unusual uses proposed.

Refuge Necedah Year 195 69 No. of Units Expressed in Reservations Rate B. F., ties. Unit or of Total and/or Diameter etc. CORDS Permittee Permit No. Location Acreage Charge Income Limits Species Cut 215 69-15 Becker S.20 19-3 24 6.30 1.354.50 Cut all merchant-Jack pine able jack pine 3. 8 19-3 1,360 PJ 6.30 8.568.00 Cut all merchant-\*Becker 70-1 127 110.00 able jack pine and aspen 110 A 1.00 Becker 70-2 S.19 19-3 51 285 Oak 1,00 285.00 Clear cut Oak 100.00 100 A 1.00 Aspen \*Kubisiak S.15 18-3 10 6.30 .00 Cut all merchant-70-3 200 able jack pine Jack pine \*Becker 70-5 S.10 19-3 40 82.07 6,00 492.42 Jack pine Horder S. 6 18-3 117.94 6.30 743.02 Thin plantation 70-6 16 Red pine as marked 70-7 S.20 19-3 23 623.70 Clear cut merchani-\*Baumgart 99.00 6.30 able jack pine Jack pine 6.30 1.267.94 Thin plantation Norted ! 70-8 S. 7 19-3 40 201,26 Red and Jack pine S. 9 19-3 160 h02.00 6-00 2.412.00 Cut all merchant-\*Becker 70-9 157.50 1.00 157.50 able jack pine and aspen 6.76 70-10 S. 7 19-3 .00 Thin plantation Red pine 40 \*Nowield None yet Becker 70-11 3.36 20-2 160 6.30 1,146.60 Clear cut Red, White & J. pine 182.00 45.50 45.50 1.00 Oak 15.00 15.00 1.00 Aspen S.20 19-3 .00 Cut all merchant-\*Bolcerek 70-12 23 None yet 6.30 able jack pine Jack pine 5.32 20-3 80 306.95 5.00 1.534.80 Clear cut Becker 67-9 Jack pine 315.53 1.00 315.53 -- Permits not completed as of 12/31/69 CONTINUED ON NEXT PAGE
Total income Total acreage cut over

Method of slash disposal

INT.-DUP. SEC., WASH., D.C. 36103

No. of units removed B. F.

Cords......

Becker

\*Becker

Refuge Necedah No. of Units Expressed in Rate Reservations Unit or B. F., ties, of Total and/or Diameter Permittee Permit No. Location etc. CORDS Acreage Income Charge Limits Species Cut 68-6 5.36 19-2 150 1.350.00 6.30 Paid Jack pine Clear cut Becker 1.00 200.00 last year Oak 500.00 1.00 Aspen 68-7 5. 4 18-3 14.00 1.00 14.00 Trespass Becker Oak Becker 68-9 360 1,000.00 6.00 Clear cut S.33 19-3 Paid Jack pine 1.00 500.00 last year Oak 50.00 1.00 Aspen 68-10 350 3.00 Paid 8.25 20-2 15.00 Clear cut Jack pine \*Becker last year 750.00 .50 Oak 50.00 .50 Aspen S.29 19-3 120 Cut all merchant-69-4 6.30 Paid Becker 500.00 5.28 19-3 last year able jack pine Jack pine 899.86 Cut all merchant-Becker 69-5 S.17 19-3 13 75.00 6.35 able jack pine Jack pine-69-9 S.20 19-3 22 241.85 6.30 1,523.66 Baumgart Jack pine #Slovensky 69-10 S.20 19-3 24 230,00 6.30 .00 Jack pine

Total acreage cut over 2,524

\*= Permits not completed as of 12/31/69

Total income \$36,973.03

232

420

S. 7 19-3

S.18 19-3

S.30 19-2

S.19 19-3 S.18 19-3

No. of units removed B. F. Method of slash disposal lopped 18 - 24 " Cords 6,764.35 Ties

69-11

69-14

663.75

1,775.00

6.30

6.30

4.181.50

11.182.50

Jack pine

Jack pine

Refuge

#### Necedah

Proposal Number Reporting Year

# ANNUAL REPORT OF PERSTICIDE APPLICATION

INSTRUCTIO	NS: Wildlife Refuges Ma	anual, secs, 3252d, 3394b and	3395.				1969	
Date(s) of Application	List of Target Pest(s)	Location of Area Treated	Total Acres Treated	Chemical(s) Used	Total Amount of Chemical Applied	Application Rate	Carrier and Rate	Method of Application
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Preposal N 7-15-69 to 8-20-69	0. 69-2  Oak spreuts (Quercus spp.)	North ends of Pools 1 & 2	320	2-4-5-T	80 gal.	4/1b/acre	Water 32/gal/ acre	Hanson Brodjet Sprayer
Proposal N	0. 69-3							
6/2 & 6/3/69	Quackgrass (Agropyron repens	Canfield, Iron-top West Yellow agricultural fields	47	Atrazine	150 lbs	3/1b/acre	Water 32/gal/ acre	Boom sprayer
		- ×						

<sup>10.</sup> Summary of results (continue on reverse side, if necessary)

Proposal No. 69-2: To control oak sprouts in area cleared of timber near pool margins. Spraying was done between 8:00 AM and 4:30 PM. Temperatures averaged slightly above 80 degrees.

Winds varied from calm to 12 m.p.h. An apparent kill of approximately 80% was observed.

Labor cost \$325; herbicide \$624; equipment costs \$110; TOTAL COST: \$1,059. = \$3.31/acre

Proposal No. 69-3: To control quackgrass in corn fields. Very good results; corn yield increased considerably.

Atrazine cost \$324.00, labor \$45., equipment cost \$12.00 TOTAL COST \$381.00 = \$8.10/acre



Front, from left, Al Johnson, Forester; Vern Rudolph, Clerk. Back, from left, Manager Dave Brown; Mechanic, Bob Arrowsmith; Harold Carter, Maintenanceman. R-69-17



Greater Sandhill Cranes again made good use of the refuge this year. During the fall migration a peak of 325 was reached and these birds fed heavily in refuge corn and buckwheat fields.

R-69-15 E-18A



The result of being able to spread water in part of our agriculture fields was excellent use of the flooded crops by waterfowl. This photo shows Canada geese heading for refuge corn. Where fields were not flooded, the crops were not well used. R-69-15 E-14A



Although the winter of 68-69 was pretty hard on them we still have some turkeys left. The hen in the bottom photo had 14 young with her indicating good nesting success. Picture of turkeys in top photo was taken in refuge agriculture field where they were often observed feeding in buckwheat. Above R-69-13A E-18 Below R-69-12 E-7





Throughout the spring, 3 fawns were observed almost daily along the refuge entrance road. These were a big attraction with refuge visitors who were often able to get close enough to take pictures. R-69-12 E-15



Everyone has been including photos of pothole blasting with the dirt up in the air. Heres one after the dirt has settled and the grass has had two years to grow around the edges. We think they look pretty good and a few pairs of ducks are beginning to think so too. R-69-11 E-15



Sheepsfoot roller as we obtained it from excess property. In converting it to a rolling chopper part of the sheepsfeet were left on to serve as braces for the chopping blades. R-69-4 E-3



Sheepsfoot roller after it had been converted to a rolling chopper. This piece of equipment is a real help in preparing logged over areas for burning. R-69-7 E-8



Installation of a bridge, also excess military property, completed the road system for our controlled burning unit around the Rynearson Pools. This of course also gives us better access for census work and other management activities.

Above Photo R-69-4 E-12 Below R-69-11 E-11





Refuge Forester Al Johnson demonstrates some forestry techniques to a group of students from Mauston High conservation class. R-69-9 E-8



Group of foreign students representing 6 countries were taken on a tour of the refuge. These people were graduate students at the University of Wisconsin studying land use in the United States. R-69-13A E-10



Becker Forest Products, Inc. which does most of the pulpwood cutting on the refuge went modern this year. With this equipment one man can fall, limb, buck, and stack pulpwood without leaving the air conditioned, mosquito free cab. We were glad to see this piece of equipment being used on the refuge as a lack of cutters often slowed timber harvest operations. Above R-69-10 E-5 Below R-69-10 E-7





Harold Carter on left and Bob Arrowsmith center, received incentive awards for their idea and construction of a rolling chopper. The chopper was made from an excess property sheeps-foot roller and resulted in a savings of \$4870 if we had to purchase it commercially. Carter received \$200 and Arrowsmith \$75. R-69-12 E-9



Vern Rudolph on left received \$100 incentive award presented by Manager Dave Brown. Vern's suggestion was to have banding returns printed on McBee type needle sort cards so it would be easier for field stations to use this information. R-69-16 E-4



The refuge is not carrying a high deer population and in general there is little over browsing. However, heavy snows such as occurred last winter prevent deer from moving and this can still happen. This is one fawn that didn't make it.

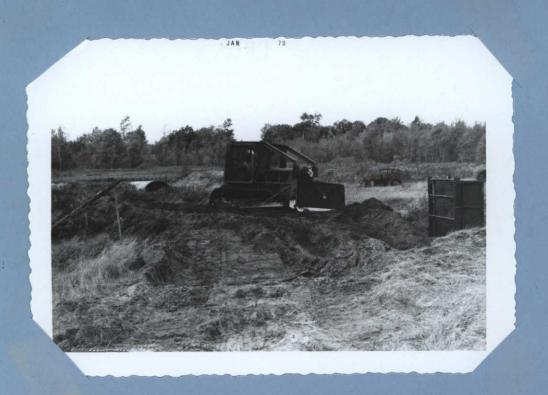
Above R-69-3 E-16 Below R-69-3 E-10





Construction and installation of a riser enabled us to back up water in the Little Yellow River Ditch and spread it over part of our agriculture fields during fall migration. Riser was made from an aircraft engine container obtained from excess property.

Above Photo R-69-14 E-18A Below R-69-15 E-4A





Moist soil food unit on north end of Pool No. 2 was flooded for the first time this year. Top photo shows area before it was mowed and burned. Willow and woolgrass with no waterfowl use. Bottom photo shows area after burning, mowing, and flooding. After leaving it flooded for several years it will be managed for millet and smartweed. Top R-68-14 E-7 Below R-69-16 E-7





Before and after photos of controlled burning work done in August. We had good success in killing woody vegetation with summer burns in 1969 and will continue to evaluate them next year. Above R-69-13A E-7 Below R-69-13A E-6





Summer burn north of Rynearson Pool # 1. Even when vegetation is green the litter accumulation from previous years will carry the fire. When air temperatures are in the 80's or 90's fire has a better chance to heat the cambium layer to a killing temperature. Top R-69-13B E-10A Below R-69-13B E-20A





One mile of new firebreak trail was constructed around the Rynearson controlled burning unit. R-69-11 E-12



Refuge crew getting ready for a controlled burn. R-69-13A E-5



Several of our entrance signs were in <u>bad</u> shape and were replaced with new ones from the sign shop at the Upper Mississippi Refuge. Top R-69-13A E-12 Below R-69-17 E-15





Sierra Club members enjoyed a snowshoe outing on the refuge. This is the type of groups that really appreciate using the refuge and are always welcome at Necedah. R-69-3 E-2



During the past summer a nature trail was put in. It begins at the observation tower and winds along the south shore of Rynearson No. 1 Pool. The paper towel dispenser attached to this sign holds leaflets and works well for this purpose. R-69-14 E-20A

## WATERFOWL

(1)			Week	s of	repor	ting	perio	d		
Species	9/11-6	9/7-£3	9/113-20	9/21-27	: :9/28-10/4	10/5-11	10/12-18	10/19-25	10/28-11/	11/2
wans:										11/6-
Whistling Trumpeter					5		1			-
	-									
eese:	000	105	710	0.750	77 000	0 (05	2 (50	6 626	2 550	0.76
Cackling	390	425	560	9,150	15,200	9,605	7,650	6,515	3,550	2,12
Brant						1,635	500		50	-
White-fronted										-
Snow		120110		State Transfer						
Blue			12		25	600	300	50	20	
	10. 100	011111111111111111111111111111111111111			50	600	500	10	20	
Other				A SECTION						
cks:									- 44	
Mallard	1,550	860	880	780	3,050	1,335	2,585	4,040	1,650	1,1
Black	100	155	360	230	250	205	575	580	275	2
Gadwall			20	30	80	155	130	325	150	100
Baldpate	20	50	3,530	3,880	4,025	2,450	3,950	5.090	2,300	1.3
Pintail	20	1,0	1,0	50	50	125	295	55	10	
Green-winged teal	300	325	1,070	15	225	25	180	230	30	
Blue-winged teal	7,600	615	530	635	525	120	225	15		
Cinnamon teal										
Shoveler	25	1000		THE PARTY OF	S MAKE		0.64			
Wood	1.000	700	210	350	300	300	350	80	50	
Redhead	The second	W. P.		-44.7		- W. Y. Y.	50	75	25	
Ring-necked	35	35	15	130	150	2.500	3,500	2.575	825	8
Canvas back				P. Califfic Street		CHECK TO	111 (404)	50	30	
Scaup						500	300	1,120	325	2
Goldeneye								50	100	1
Bufflehead								40		
Ruddy				15	25	65	35	150	100	
Other H. merganser					10	25	10	25	2 12 7 11 15 2	
		80	315	600	3.025	6.945	5.900	4.080	2.600	9

(Rev. March 1953)

WATERFOWL Interior Duplicating Section, Washington, D. (Continuation Sheet)

MONTHS OF Sept. 1 TO Dec. 31 , 19 69 REFUGE Necedah (3) Weeks of reporting period : Estimated (4) : Production (0) hes (1) maper: :11/9-15 :11/16-22 11/23-29 : : : : : : : : : : : : waterfowl :Broods: Estimate : 11 : 12 : 13 : 14 : 15 : 16 : 17 : 18 : days use : seen : total :Broods: Estimated Species Swans: A SUMMERT of data recorded unde 42 Whistling Trumpeter TOPTOT Geese: 418.700 Canada 4.100 500 100 15.645 Cackling Brant White-fronted Snow 6.965 Blue Borgan Branch 8,260 Other Ducks: Mallard 40 35 129,560 750 Black 21,320 130 Gadwall 6.475 10 188,770 Baldpate 325 4.810 Pintail 5 Green-winged teal 18,670 Blue-winged teal 28,255 Cinnamon teal 150 Shoveler Wood 22.590 Redhead TIT 102 1,050 Ring-necked 77.245 Canvasback 560 Scaup 23.590 Goldeneye 2,310 Bufflehead 560 Ruddy 3,080 Other H. merganser 490 Coots: Loral Days Use : 50 171,465 over)

(5) Total Days Use:	(6) (7) Peak Number: Total Production	SUMMARYJITER
Other H. merganser :		
Swans 42:	5:	Principal feeding areas Sprague, Goose and Rynearson
Geese 449,570	15,275	Pools, Canfield Agriculture fields.
Ducks 529,485 :	14,500 :	Principal nesting areas
Coots 171.465 :	6,945	77,245
Blue-winged teal Cinnamon teal Shoveler Wood		Reported by David J. Brown, Refuge Manager
Green-winged teal		38 355
The state of the s	RUCTIONS (See Secs. 7531 through	7534, Wildlife Refuges Field Manual)
(1) Species:		on form, other species occurring on refuge during the d in appropriate spaces. Special attention should be and national significance.
Reporting Period:	Estimated average refuge popula	tions.
Snow		8,260
(3) Estimated Waterfowl		6,965
Days Use:	Average weekly populations x num	mber of days present for each species.
(4) Production:	sentative breeding areas. Brood	ced based on observations and actual counts on reprediction counts should be made on two or more areas aggregating stimates having no basis in fact should be omitted.
(5) Total Days Use:	A summary of data recorded under	r (3).
(6) Peak Number:	Maximum number of waterfowl pres	sent on refuge during any census of reporting period.
(7) Total Production:	A summary of data recorded under	(4). n g period : Estimated : Froduction
		(3) (#)
REPUGE Necedah		MONTHS OF Sept. 1 TO Dec. 31 19 0

TO Dec. 31

Interior Duplicating Section, Washington, D. C.
(New 1953)

# MIGRATORY BIRDS

(other than waterfowl)

Refuge Necedah Months of Sept. 1 to Dec. 31 195 69

(4) 1934 (1)	(2)	(3)	(4)	(5)	(6)
Species	First Seen	Peak Numbers	Last Seen	Production   Number   Total #   Total	Total Estimated
Common Name	Number Date	Number Date	Number Date	Colonies Nests Young	Number
I. Water and Marsh Birds:  Pied-billed Grebe Great Blue Heron Green Heron American Bittern Common Loon Virginia Rail Sora Rail Sandhill Crane	Summer resident	75 Sept 20 75 " Fairly common 10 Sept 1 Oct 0ccasional in Sept " " 325 Oct 11	mid-Oct 30 Nov 8	Mard MG. Brown, Refuge The Militan and list group a middistan to the birds lists period mould be added in species a local and Matien as to discontiformer and Gre radrifformes) Strigife was and predaceous Passeri ormes)	Manager T. A.O.U. S on appro- ti (1 formes)
II. Shorebirds, Gulls and Terns:	Early Sept. Summer rasident Summer rasident Summer rasident Summer resident Summer resident	6 Late Oct 5 Cet 30 Cet 5 Cet 75 Cet 95 Oct 95 Oct 98 Oct 98 Oct	I 12/15 srly hov title now srly bec trober sported		
Killdeer Woodcock Common Snipe Greater Yellowlegs Lesser Yellowlegs Least Sandpiper Herring Gull Upland Plover	Summer resident """ """ """ """ Summer resident	common thru Septing in the interval in the int		sw-whet Gwl Feet creech wil w creach wil w erred Owl w	ually observe-
III. Doves and Pigeons:	(8)	(over)		(e)	ter

(1		(2	2)		3)	1 = 2	(4)	(5)	(6)	
III. Doves and Mourning White-win	dove	Summer	resident	700	late Aug	25	late Sept			
	s Birds: gle	4	nal und resid und resid	B B	Oct 5	3.	Nov 9	Saw-whet Owl Screech Owl Barred Owl Great Gray Owl	February	observa tion "
Bald eagl Goshawk Red-tailed Rough-leg Marsh Haw Sparrow H Cooper's 1	e d Hawk ged Hawk k awk	2 Early Summer Early Summer Summer	10/18 Sept. resident Oct resident resident resident	6 5 30 5 35 common 5	late Oct Oct Oct Oct thru Oct	l Early Still Late Early October	12/15 Nov present Nov Dec	David & Brown		

INSTRUCTIONS

(1) Species:

Common Loon

Green Heron

Great Blue Heron

Pied-billed Grebe

Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiiformes)

II. Shorebirds, Gulls and Terns (Charadriiformes)

Doves and Pigeons (Columbiformes)

IV. <u>Predaceous Birds</u> (Falconiformes, Strigiformes and predaceous Passeriformes)

(2) First Seen: The first refuge record for the species for the season concerned.

(3) Peak Numbers: The greatest number of the species present in a limited interval of time.

(4) Last Seen: The last refuge record for the species during the season concerned.

(5) Production: Estimated number of young produced based on observations and actual counts.

(6) Total: Estimated total number of the species using the refuge <u>during the period</u> concerned.

INT.-DUP. SEC., WASH., D.C.

59317

# UPLAND GAME BIRDS

Refuge Necedah Months of Sept. 1 to December 31 , 1969

Form MR-2 - UPLAND GAME BIRDS\*

(1) Species	(2) Density	ndted no mation	a infe	(3) Young oduced	gyd g	(4) Sex Ratio	timo ta re ogui	(5) Remova		(6) Total	(7) Remarks	
Common Name	Cover types, t	total H	Acres Per Bird	Number broods observed	Estimated Total	Percentage	Hunting	For Re- stocking	For Research	Estimated number using Refuge	Pertinent informs specifically requ List introduction	ested.
ffed Grouse	30,000	(a v me	arks.	nder Rem	ted u	ld be indica	notia	reas	3 70	1,100		
earp-tailed Gro	ouse 10,000 5,000	bas aab.	ljevis	edo noqu	.beas.	produced, 1	oung bits	of y	reedil umber	25 6 ev kastras 15	YOUNG PRODUCED:	(٤)
ld Turkey	30,000	.pjs	sants,	ay, phea	turk	rily to wild	rima	ies p	lqqa Llavs		SEX RATIO:	(4)
odeock	12,000	e repor	ing th	ub bevo	y rem	each categor	in	umber	n Led	Unknown	REMOVALS:	(5)
ipe abulor	5,000	t perio	repor	ting the	ge du	ing the refu	au 1	edaun	Lado	Unknown	TOTAL:	(6)
) include	n survey. Als	l bersv	rea co sted.	on and a	ljati fical	stermine pop	to d	lnfor	thod	Indicate me other perti	REMARKS:	
					ed.	should be us	hen	evos	porio	g eds os el	daoligga annuloo	*Only
		1										

#### INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS\*

(1) SPECIES: Use correct common name.

(2) DENSITY:

Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

- (3) YOUNG PRODUCED:
  - Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.

Woodcook

(4) SEX RATIO:

This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.

(5) REMOVALS:

Indicate total number in each category removed during the report period.

(6) TOTAL:

Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.

(7) REMARKS:

Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

\*Only columns applicable to the period covered should be used.

Refuge NECEDAH

Calendar Year 1969

(1) * Species	(2) Density	(3) Young Produced			toas (jt)	ls	II		(5) sses	In	(6) troductions	Estima Total I Popula	ated Refuge	(8) Sex Ratio
Common Name	Cover types, total Acreage of Habitat	Number	Hunting	For Re- stocking	Sold	For Research	Predation	Disease	Winter Loss	Number	Source	At period of Greatest use	As of Dec.	
White-tailed Dee	35,000 acres of timber, brush and marsh	1100	409	en o	78.4 0 8 78.8 78.8	TSYOUT SE	o to	() () () () () () () () () () () () () (	25	of levelow	nosse social leab sdf de leabes social leases seal	1,450	800	
D.20.7.18	Harvest: 30 early bow 244 gun season 135 late bow 409	den ferri			ns toX	liqua rabn	5 5 h	122 128 128 128 180	iness that late	rept ad 5	no niques i luons amara mantan (GA	no no phone and	¥ (§)	
	among and matter	Intoper	510		5 6	ose n	1 12	ofin	m Las	e te	asibal	BJAYOM	El (JJ)	
		wiles aid	a A.E	19 3	9 .8	ivi ode swij o	t 10	100 mil	t to a	tend tegat	ed: AO so so so -	:5583:	u (9)	
		e mont go	rag		9.5	icter.	0.85	10	lewn e	id e	i: Indica	KOTTOURDATE	(6)	
		o saloson	Ma on	19 7 1 30	0 A	olimi	par	2 6		ie e	Greats	HALL HEFTON:	ar (1)	
2017		ia eslame	1 2 1 1 2	OR S	o I si	e To	3.8	LESS (	rteg e	i) s	solbal bloft	: DITAE RE	e (a)	

Remarks:

Reported by David J. Brown

#### INSTRUCTIONS

### Form NR-3 - BIG GAME

- (1) SPECIES: Use correct common name; i.e., Mule deer, black-tailed deer, white-tailed deer. It is unnecessary to indicate sub-species such as northern or Louisians white-tailed deer.
- DENSITY: Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples:

  spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) YOUNG PRODUCED: Estimated total number of young produced on refuge.

Reported by Marin-i. Brown

- (4) REMCVALS: Indicate total number in each category removed during the year.
- (5) LCSSES: On the basis of known records or reliable estimates indicate total losses in each category during the year.
- (6) INTRODUCTIONS: Indicate the number and refuge or agency from which stock was secured.
- (7) TOTAL REFUGE
  POPULATION: Give the estimated population of each species on the refuge at period of its
  greatest abundance and also as of Dec. 31.
- (8) SEX RATIC: Indicate the percentage of males and females of each species as determined from field observations or through removals.

### DISEASE

Necedah

	Refuge Necedah	Year 19. 69
*	Botulism NONE	Lead Poisoning or other Disease NONE
Period of outbreak_		Kind of disease
Period of heaviest l	osses	Species affected
Losses:  (a) Waterfowl (b) Snorebirds (c) Other	Actual Count Estimated	Number Affected Species Actual Count Estimated
Number Hospitalized	No. Recovered % Recovered	Number Recovered_
(a) Waterfowl (b) Shorebirds (c) Other		Number lost Source of infection
Areas affected (loca	tion and approximate acreage)	Water conditions
	erage depth of water in sickness as, reflooding of exposed flats, etc.	Food conditions
Condition of vegetat	ion and invertebrate life	Remarks

NONAGRICULTURAL COLLECTIONS, RECEIPTS, AND PLANTINGS

3-1757 Form NR-7 (Rev. June 1960)

Refuge	Necedah	Year	19	69
uer na e		Teat	17	

		Colle	ection	s and Re	ceipts					Plant	ings				
	(Seed	ls. ro	otsto	cks, tre	es. sh	rubs)			(	Marsh - Aqua	tic -	Upland	)		
- 3										Amount		- 1 -			
	Amount	(2)			- 11	(3)			Rate of	Planted					
				Madaaa		Total					Amoun	+			
	(Lbs.,	C		Method			T		Seeding	(Acres or	1				~
	bus.,	or		or	E i	Amount		tion of	or	Yards of	Natur				Cause
Species	etc.)	R	Date	Source	Cost	on Hand	Area	Planted	Planting	Shoreline)	Propa	gules	Date	Survival	of Los
Japanese			,	lauston											
Millet	1,000	R	Ammi 7	Coop.	00.19	700 The	Dym	Dool 2	20 72/	05, 2000	F00 7		6/05	304	
WITTER	1,000	n	WDLTT			700 lbs	Ryn.	FOOT 2	20 lb/ac	25 acres	200 T	os see	1 6/25	70%	2
D - 1 M: 22 - 4	7 500	n		ewaukon											
Red Millet	1,500	R	April	NWR	none	1,000 lbs	11	11	tt	11	11	11	17	11	
			1				27								
							e.								
					-										
						_									
	1														
	-														
				P. 2			e e								
											100				
									I						

<ul> <li>(1) Report agronomic farm crops on Form NR-8</li> <li>(2) C = Collections and R = Receipts</li> </ul>	Remarks:
(3) Use "S" to denote surplus	
Potal acreage planted:	
Marsh and aquatic50 acres	
Hedgerows, cover patches	
Food strips, food patches	
Forest plantings	

## Fish and Wildlife Service Branch of Wildlife Refuges

### CULTIVATED CROPS - HAYING - GRAZING

Refuge Nec	edah		-8	County	Jun	eau		_State _	Wisconsin	
Cultivated Crops Grown	Permitt Share Ha Acres Bu			Government's arvested  Bu./ Tons	Unha	or Return rvested Bu. /Tor	Tota Acrea	.l Cove	n Manure, r and Water- Browsing Cr and Kind	
Field Corn	bed	belle belle berke	10	500 bu	37	2,960 b	u 47	OMD OF	Rye	40
Buckwheat	t ts	10 C	bean	or the water	54	1,350 b	ou 54	E EL	Alfalfa	52
parposes during the year.	e listed in the same manner oul	pay it the crop results fro such and the crops and the crops and the	ed - Report all acreare pla	Red sug rebort nuger Branels if the construction of prepared of Kisty forces at the construction of the co	word Baryested Show	sond house of farm crops harved bushels for the Bughels harved tent the Bughels harved tent to affect the tent tent to the tent tent to the tent tent tent tent tent tent tent	Only thenumber of scree util	bedraid agons its deid - nw	Grass mixtubluegrass, stop, timothy legumes	red- y, 121
No. of Permittees:	b Words Agr	icultura	l Opera	ations 0	eridis enida	Haying	Operation	s <u>1</u>	Grazing Op	erations 1
Hay - Improved (Specify Kind)	Tons Harvest	ed	Acres	Cash   Revenue	Gra		Number nimals	AUM'S	Cash Revenue	ACREAGE
Alfalfa	77.2	Tosted be as a branch	52	\$193.00	l. Catt	le	12	62	\$10.90	145
dev		duby Kruo	UIIsl	LOOG COA6 PUT BELIN	2. Othe	118 107 207 800	Apiary	20 hives	2.00	54 (buckwheat
							Acreage U			314
Hay - Wild	0				2. Acre	age Culti	vated as	Service 0	peration	314

DIRECTIONS FOR PREPARING FORM NR--8 CULTIVATED CROPS - HAYING - GRAZING

Report Form NR-8 should be prepared on a calendar-year basis for all crops which were planted during the calendar year and for haying and grazing operations carried on during the same period.

Separate reports shall be furnished for Refuge lands in each county when a refuge is located in more than one county or State.

377

<u>Cultivated Crops Grown</u> - List all crops planted, grown and harvested on the refuge during the reporting period regardless of purpose. Crops in kind which have been planted by more than one permittee or this Service shall be combined for reporting purposes.

Permittee's Share - Only thenumber of acres utilized by the permittee for his own benefit should be shown under the Acres column, and only the number of bushels of farm crops harvested by the permittee for himself should be shown under the Bushels Harvested column. Report all crops harvested in bushels or fractions thereof except such crops as silage, watermelons, cotton, tobacco, and hay, which should be reported in tons or fractions thereof.

Government's Share or Return - Harvested Show the acreage and number of bushels harvested for the Government of crops produced by permittees or refuge personnel. Unharvested Show the exact acreage and the estimated number of bushels of grain available for wildlife. If grazing is made available to waterfowl through the planting of grain, cover, green manure, grazing or hay crops, estimate the tonnage of green food produced or utilized and report under Bushels Unharvesed column.

Total Acreage Planted - Report all acreage planted, including crop failures.

Green Manure, Cover and Waterfowl Grazing Crops Specify the acreage kind and purpose of the crop. These crops and the acreage may be duplicated under cultivated crops if planted during the year, or a duplication may occur under hay if the crop results from a perennial planting.

Hay - Improved - List separately the kinds of improved hay grown. Annual plantings should also be reported under <u>Cultivated Crops</u>, and perennial hay should be listed in the same manner at time of planting

Total Refuge Acreage Under Cultivation Report total land area devoted to agricultural purposes during the year.

### REFUGE GRAIN REPORT

INT .- TRIE, SEC., WARM., D.C. ATD45

(1)	(2) On Hand	(3) Received	(4)		GRAIN D	(5) ISPOSED OF		(6) On Hand	Proposi	(7) ED OR SUITAB	LE USE*
Variety*	BEGINNING of Period	During Period	TOTAL	Transferred	Seeded	Fed	Total	END OF PERIOD	Seed	Feed	Surplus
Corn (shelled) Corn (seed) Buckwheat	200 1 135	0 9 0	200 10 135	0	0 10 54	100 41	100 10 95	100 0 40	40	100	
Wheat, Spring Rye Millet, Japanese	20 0 14	88 20	20 88 24	O NOT	23 10	ination o	23 10	20 55 14	55 14	20	
Millet, Proso Millet, Red Sorghum	0 3	0 30 0	8 30 3	opa, shipping a	10	R.	6 10	2 20 3	2 20 3		
Oats Alfalfa, Vernal Bluegrass	10	0 5 0	2 2 200 1		4		4	10 2 1	10 2 1		
Timothy Alsike Clover Red Clover	3 0	0 2 6	3 2 6	ing period	3	ources, su	3	3 0 3	3		
Ladino Clover	(I) List e hyb	ng count Ra	grain separ net wheat, owpeas, nil- as apecific arclad 5 onl	ed May w ade soy b	test, duran	wheat, s	ng as com,	ent com, su successibles of seath and of seath	erre deal combine my beams applies to		
gr 60 mi	in shall be o	onsidered 0 lb., rye-	55 lb., oats-	a bushel -90 lb., so	Corn (sh r hearts—6	elled)—51 0 lb., mil		ex) 70 Ib.,	wheat- lb,, and		

(8)	Indicate shipping or collection points New Lisbon, Wisconsin
(9)	Grain is stored at Granaries at secondary and primary headquarters

(10) Remarks

<sup>\*</sup>See instructions on back.

(9) Grain is stored at

PROTUC CICARL

Alfalfa, Vernal

Millet, Red

Willer, Prosc.

Mededan

Timo buy

### REFUGE GRAIN REPORT

This report should cover all grain on hand, received, or disposed of, during the period covered by this narrative report.

Report all grain in bushels. For the purpose of this report the following approximate weights of

Report all grain in bushels. For the purpose of this report the following approximate weights of grain shall be considered equivalent to a bushel: Corn (shelled)—55 lb., corn (ear)—70 lb., wheat—60 lb., barley—50 lb., rye—55 lb., oats—30 lb., soy beans—60 lb., millet—50 lb., cowpeas—60 lb., and mixed—50 lb. In computing volume of granaries, multiply the cubic contents (cu. ft.) by 0.8 bushels.

- (1) List each type of grain separately and specifically, as flint corn, yellow dent corn, square deal hybrid corn, garnet wheat, red May wheat, durum wheat, spring wheat, proso millet, combine milo, new era cowpeas, mikado soy beans, etc. Mere listing as corn, wheat, and soybeans will not suffice, as specific details are necessary in considering transfer of seed supplies to other refuges. Include only domestic grains; aquatic and other seeds will be listed on NR-9.
- (3) Report all grain received during period from all sources, such as transfer, share cropping, or harvest from food patches.
- (4) A total of columns 2 and 3.
- (6) Column 4 less column 5.
- (7) This is a proposed break-down by varieties of grain listed in column 6. Indicate if grain is suitable for seeding new crops.
- (8) Nearest railroad station for shipping and receiving.
- (9) Where stored on refuge: "Headquarters granary," etc.

(4)

(10) Indicate here the source of grain shipped in, destination of grain transferred, data on condition of grain, unusual uses proposed.

#### TIMBER REMOVAL

	-			
D - 0	Necedah	77000	105	10
Keluge	Necedan	rear	T 200	-07

	6 I 4			No. of Units				
<b>*</b>				Expressed in	Rate		Reservations	
**		Unit or		B. F., ties,	of	Total	and/or Diameter	
Permittee	Permit No.	Location	Acreage	etc. CORDS	Charge	Income	Limits	Species Cut
Becker	69-15	S.20 19-3	24	215	6.30	1,354.50	Cut all merchant- able jack pine	Jack pine
*Becker	70-1	S. 8 19-3	127	1,360 PJ	6.30		Cut all merchant-	
				110 A	1.00	110.00	able jack pine an	d aspen
Becker	70-2	S.19 19-3	57	285 Oak	1.00		Clear cut	0ak
				100 A	1.00	100.00		Aspen
*Kubisiak	70-3	S.15 18-3	40	200	6.30	.00	Cut all merchant-	
							able jack pine	Jack pine
*Becker	70-5	S.10 19-3	40	82.07	6.00	492.42	II II	Jack pine
Nowicki	70-6	S. 6 18-3	16	117.94	6.30	743.02	Thin plantation	Red pine
							as marked	
*Baumgart	70-7	S.20 19-3	23	99.00	6.30	623.70	Clear cut merchan	-
3					L = Ileas		able jack pine	Jack pine
*Nowicki	70-8	S. 7 19-3	40	201.26	6.30	1,267.94	Thin plantation	Red and
* 1								Jack pine
*Becker	70-9	S. 9 19-3	160	402.00	6.00	2,412.00	Cut all merchant-	
				157.50	1.00	157.50	able jack pine an	l aspen
*Nowicki	70-10	S. 7 19-3	40	None yet	6.76		Thin plantation	Red pine
*Becker	70-11	S.36 20-2	160	182.00	6.30	1.146.60	Clear cut Red, W	nite & J. pine
				45.50	1.00	45.50		Oak
				15.00	1.00	15.00		Aspen
*Bolcerek	70-12	S.20 19-3	23	None yet	6.30		Cut all merchant-	
	N. P. C.						able jack pine	Jack pine
Becker	67-9	S.32 20-3	80	306.95	5.00	1.534.80	Clear cut	Jack pine
				315.53	1.00	315.53		
* Permits not comp	leted as of	112/31/69						

Total acreage cut over CONTINUED ON NEXT PAGE
Total income

No. of units removed B. F. Method of slash disposal Cords.....

Ties.....

#### TIMBER REMOVAL

	Re	fuge	Necedah			Year 19 <b>8</b> .69			
Permittee	Permit No.	Unit or Location	Acreage	No. of Units Expressed in B. F., ties, etc. CORDS	Rate of Charge	Total Income	Reservations and/or Diameter Limits	Species Cut	
Becker	68–6	S.36 19-2	150	1,350.00 200.00 500.00	6.30 1.00 1.00	Paid last year	Clear cut	Jack pine Oak Aspen	
Becker	68-7	S. 4 18-3	3	14.00	1.00	14.00	Trespass	Oak	
Becker	68-9	S.33 19-3	360	1,000.00 500.00 50.00	6.00 1.00 1.00	Paid last year	Clear cut	Jack pine Oak Aspen	
*Becker	68-10	S.25 20-2	350	15.00 750.00 50.00	3.00 .50 .50	Paid last year	Clear cut	Jack pine Oak Aspen	
Becker	69-4	S.29 19-3 S.28 19-3	120	500.00	6.30	Paid last year	Cut all merchant- r able jack pine	Jack pine	
Becker	69 <b>-</b> 5	S.17 19-3	13	75.00	6.35		Cut all merchant- able jack pine	Jack pine	
Baumgart	69 <b>-</b> 9	S.20 19-3	22	241.85	6.30	1,523.66	-11	Jack pine	
*Slovensky	69-10	S.20 19-3	24	230.00	6.30	.00	" " "	Jack pine	
Becker	69-11	S. 7 19-3 S.18 19-3	232	663.75	6.30	4,181.50	" "	Jack pine	
*Becker	69-14	S.30 19-2 S.19 19-3 S.18 19-3	420	1,775.00	6.30	11,182.50	" "	Jack pine	
*= Permits not comple	ted as of 12	/31/69							

Total acreage cut over 2,524

Total income \$36,973.03

No. of units removed B. F.

Method of slash disposal lopped 18 - 24 "

Cords 6,764.35 Ties

Refuge

Necedah

Proposal Number Reporting Year

1969

#### ANNUAL REPORT OF PERSTICIDE APPLICATION

INSTRUCTIONS: Wildlife Refuges Manual, secs. 3252d, 3394b and 3395.										
Date(s) of Application	List of Target Pest(s)	Location of Area Treated	Total Acres Treated	Chemical(s) Used	Total Amount of Chemical Applied	Application Rate	Carrier and Rate	Method of Application		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)		
Proposal N	0. 69-2					•				
7-15-69 to 8-20-69	Oak sprouts (Quercus spp.)	North ends of Pools 1 & 2	320	2-4-5-T	80 gal.	4/lb/acre	Water 32/gal/ acre	Hanson Brodjet Sprayer		
Proposal N	0. 69-3									
6/2 & 6/3/69	Quackgrass (Agropyron repens	Canfield, Iron-to ) West Yellow agricultural fiel		Atrazine	150 lbs	3/lb/acre	Water 32/gal/ acre	Boom sprayer		
						_				

10. Summary of results (continue on reverse side, if necessary)

Proposal No. 69-2: To control oak sprouts in area cleared of timber near pool margins. Spraying was done between 8:00 AM and 4:30 PM. Temperatures averaged slightly above 80 degrees.

Winds varied from calm to 12 m.p.h. An apparent kill of approximately 80% was observed. Labor cost \$325; herbicide \$624; equipment costs \$110; TOTAL COST: \$1,059. = \$3.31/acre

Proposal No. 69-3: To control quackgrass in corn fields. Very good results; corn yield increased considerably. Atrazine cost \$324.00, labor \$45., equipment cost \$12.00 TOTAL COST \$381.00 = \$8.10/acre